This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

THE

PRACTICAL MEDICINE SERIES

COMPRISING TEN VOLUMES ON THE YEAR'S PROGRESS IN MEDICINE AND SURGERY

UNDER THE GENERAL EDITORIAL CHARGE OF

GUSTAVUS P. HEAD, M. D.

PROFESSOR OF LARYNGOLOGY AND RHINOLOGY,
CHICAGO POST-GRADUATE MEDICAL SCHOOL

VOLUME IX.

SKIN AND VENEREAL DISEASES
MISCELLANEOUS
PATHOLOGY, BACTERIOLOGY, PHYSIOLOGY

EDITED BY

W. L. BAUM, M. D.
HAROLD N. MOYER, M. D.
W. A. EVANS, M. S., M. D.

SERIES 1907

CHICAGO
THE YEAR BOOK PUBLISHERS
40 Dearborn Street

BOSTON MEDICAL
JAN 12 1914
LIBRARY.

COPYRIGHT 1907

BY

THE YEAR BOOK PUBLISHERS.

CATALOGUED
JAN 12
J. F. B.

Departments.

SECTION I

Skin and Venereal Diseases

By WILLIAM L. BAUM, M. D.

Professor of Skin and Venereal Diseases, Chicago Post-Graduate Medical School.

SECTION II

Miscellaneous

By HAROLD N. MOYER, M. D.

SECTION III

Pathology, Bacteriology and Physiology

By W. A. EVANS, M. S., M. D.

Professor of Pathology, College of Physicians and Surgeons, Chicago; Pathologist to Cook County Hospital and Columbus Medical Laboratory; Health Commissioner, City of Chicago.

TABLE OF CONTENTS.

SECTION I.

SKIN AND VENEREAL DISEASES.

PAGE.

CHAPTER I.
Special Dermatoses 9

CHAPTER II.
Constitutional Relations of the Dermatoses 19

CHAPTER III.
Therapy of the Dermatoses 44

CHAPTER IV.
Radiotherapy 61

CHAPTER V.
Gonorrhea and Chancroid 69

CHAPTER VI.
Syphilis 83

CHAPTER VII.
Genito-urinary Medicine and Surgery 108

SECTION II.

MISCELLANEOUS.

Degeneracy 133
The Physical and Evolutionary Basis of Marriage..... 141
Patent and Proprietary Medicines 143
Professional Confidences 147
Specialism 149
Some Causes of Inefficiency in Medical Practice..... 150
Teaching of Medicine in Edinburgh 151
Teaching Functional Pathology 153
Medical College Hospital 153
Aims and Requirements of Medical Education 155
Agreement of Regular and Homeopathic Physicians 157
Means of Identification 158
Ambulance Speed 159

PAGE.
The Physician in First Aid 160
Prognosis 161
The Vegetable Unit Description 162
The Time of Death 163
The Origin of Life 164
Transmutation of Metals..... 164
Medical Illustrations 166
Historic Salt-Free Diet in Ascites 167
Hippocratic Methods 168
The Ship Surgeon 173
Christian Science 174
Relation of the Pharmacist and Physician 179
Relation of Physician and Patient 182
Snobbery in Flat Owners 185
Malpractice Suits 186
The Age Limit 187
Medical Practice Among the Maoris 187
Marriage Laws and Customs of the Australian Aborigines.. 193
Deleterious Effects of Iron 199

SECTION III.

PATHOLOGY, BACTERIOLOGY AND PHYSIOLOGY.

PATHOLOGY.

Laboratory Diagnosis and Technic 203
The Blood 205
The Urine 206
The Semen 209
Seropathology and Serum Diagnosis 209

BACTERIOLOGY.

General Technic 220
Pathogenic Cocci 221
Typhoid Bacilli 225
Tubercle Bacilli 226
Syphilis 228

PHYSIOLOGY.

Causes of Fatigue 229
Modern Theories of Digestion 230
Diet and Metabolism 231
Sympathetic Nervous System 233

SKIN AND VENEREAL DISEASES

BY

WILLIAM L. BAUM, M.D.

BOSTON MEDICAL
JAN 12 1914
LIBRARY

SECTION I.

SKIN AND VENEREAL DISEASES

CHAPTER I.

SPECIAL DERMATOSES.

Darier's Disease. According to W. A. Jameson[1] this is a chronic dermatosis, characterized clinically by papulo crusts, often follicular, having a fixed regional topography; anatomically, by a special disturbance of the keratinization of the epidermic cells. When a single elementary lesion is examined, the most conspicuous feature is a brownish or yellowish, occasionally a blackish-gray, crust. This is thickest in its center, and may, indeed, arise to quite a considerable height, even half an inch or more. It is hard, dense and horny in consistence, and is embedded in a funnel-shaped depression with slightly elevated borders, to which it firmly adheres. When forcibly separated, the cavity disclosed still contains a variable amount of soft sebaceous-like accretion.

The lesions at this stage correspond to the pilosebaceous follicles. But Darier points out that there are two varieties of further progress. In one the horny masses grow more than the subjacent papulation, and thus the resulting incrustation may become very extensive. When removed, an irregular reddish and moist surface is exposed, in which the small papular crateriform elements are hardly recognizable. This form is assumed in regions where the follicular system does not attain a great development, as

(1) Edinburgh Med. Jour., January, 1907.

the flanks or limbs. At the extreme margins, however, the typical papules are discoverable. On the other hand, in some exceptional examples the papulation is exaggerated at the expense of the crusting. This constitutes the follicular and vegetating variety, and, as might be anticipated, it reaches its highest development in warm and humid localities, as in the folds of the groin and axillæ. Here somewhat fleshy prominences replace the hard and dry projections. This modification is perhaps attributable to situation rather than to any inherent difference in the disease.

Eczema in the Second Year of Life. According to C. A. Kinch,[1] infancy comprises three years of life, and is divisible into two periods: Nursing, about twelve months; ambulant or runabout, second and third years. In the nursing period by far the most common form of eczema is the neurotic. The typical picture of infantile eczema is vesicular, covering the face like a circular mask, avoiding the region of the eyes and nose. It is not parasitic. Scrofulous eczema is seldom seen in babyhood, seborrheic never. In the runabout period neurotic eczema is rare. Scrofulous eczema is common in the ambulant child. Seborrheic dermatitis in the runabout period takes on a character similar to the same disease in adults and responds with the same readiness to local treatment. It is in these cases that mild and brief applications of the *x*-ray, as in psoriasis, are helpful, and parasiticides accomplish brilliant results. Proper attention should be paid to tonic and corrective internal medication.

Infantile Eczema. This affection is discussed by J. M. H. MacLeod,[2] who divides it into three types. The first is the ordinary infantile eczema, in which the face is chiefly affected, the lesion consisting of red, dry irritable patches covered with small papules or scaly where the skin looks dry, thin and shiny and where even slight rubbing would transform it into an oozing patch. The second type is one in which the face presents dry scaly patches of seborrheic dermatitis and the scalp is plastered over with yellow greasy crusts. The third type is that in which the dermatosis is located on the trunk.

(1) New York Med. Jour., Aug. 17, 1907.
(2) Clinical Jour., July 24, 1907.

Blastomycosis in an Infant. A case of infantile blastomycosis is reported by J. B. Kessler.[1] The child when about five months old was brought for treatment of an eruption which had appeared on her hand and cheeks a week or ten days previously. The lesions consisted of patches about the size of a silver dollar; the one on the left cheek was oblong in contour, those on the right cheek and scalp were more or less circular. The patches consisted of crusts which were raised and warty in appearance, with red borders; there was a small amount of pus under the crusts, and especially at the edges. In a few days other pinhead-sized patches appeared around these, and formed crusts which gradually enlarged until, coalescing with the larger crusts, they formed large patches. An ointment was applied, which seemed to stop the extension of the lesions, but did not remove them. This treatment was continued for about three weeks. Three months thereafter she came under Kessler's care, who found a well-nourished child with a lesion on the right cheek, two and one-half by three inches in area; on the left cheek, one a little larger, which was inclined to be circular in outline; one large patch on the scalp, extending from the anterior of the occiput nearly or quite to the frontal bone, in width about three and one-half inches, with small split-pea-sized lesions scattered from the facial to the parietal lesions, and many small patches on the buttocks and hips, which were devoid of crusts or warty appearance, but retained the red border—probably due to the contact of urine and frequent bathing. The patches on the face were elevated from one-eighth to one-fourth of an inch above the surrounding skin, the surface was covered with papilliform elevations separated by small clefts of varying depths, giving them a warty or cauliflower appearance. The borders sloped more or less abruptly from the elevated roughened surface to the surrounding skin. In color the lesions were not as dark as are those usually encountered in older patients, but were set with as many small abscesses as are usually found; but the warty projections were more delicate, and a small amount of pus could be made to exude on pressure. Microscopically a blastomycosis diag-

(2) Jour. Am. Med. Assoc., Aug. 17, 1907.

nosis was made. A good recovery resulted from potassium iodid which was given through the mother.

Cutaneous Horn. This condition occurring in a 35-year-old woman is reported by J. W. C. Macewen.[1] At the age of 23, a pea-sized swelling appeared on the left side of her head. This swelling increased slowly in size until two years later, when she received an accidental knock on it, the skin being broken by the impact. Suppuration set in and continued for some time, and as it subsided she noticed some three or four little projections growing from the site. These projections grew slowly until some four years ago, when all but one were removed by operation. The remaining projection did not give her much trouble until six months ago, when it began to grow rapidly. Apart from the inconvenience caused by the presence of the horn, she had long been troubled by headaches of varying severity on the left side of the head. The horn had a distinctly horn-like structure, had a rough surface, and was 2¼ inches in length from base to tip, apart from the twisting. While firmly attached to its place of origin, it was yet freely movable, owing to the extreme mobility of the cutaneous base. The horn, together with a portion of the surrounding scalp, being excised under a local anesthetic. The part was very richly supplied with blood. The patient made an uninterrupted recovery, the wound healing aseptically, and she has since been free from headache.

Oral Lichen Planus, Leukoplakia and Luetic Lesions. These, according to D. Lieberthal,[2] are to be differentially diagnosticated as follows: In leucoplakia the patient consults the physician because of subjective symptoms of dryness, stiffness, more or less pain at ingestion of hot or very cold liquids or spicy substances, while in lichen planus the lesions of the cheeks are rarely noticed by the patient and then only in rare instances when the tongue touching them perceives slight roughness, while those of the tongue may be felt as a slight stiffness in mastication. Leucoplakia never heals without local interference, but planus may heal spontaneously or disappear by administration of arsenic, while cases calling for local treatment are in the minority. The changes observed on inspection differ materially

(1) Lancet, Feb. 8, 1907.
(2) Jour. Am. Med. Assoc., Feb. 16, 1907.

from those of lichen planus. Papular formations are rarely encountered and if plaques present themselves, they are, as a rule, thickened and hardened. If on the cheeks and of a recent stage of development, they affect in many instances the mucosa behind the angle of the mouth, while lichen frequently first develops on the posterior portion. If left untreated, leucoplakia shows the tendency to increase in thickness with time, to become rough, rugged, and even exfoliating, while lichen planus becomes flatter and smoother continuously until at last it is level with the mucosa and represents only a discoloration such as is produced by the application of silver nitrate. This latter appearance is noted also in recurring lichen planus. In lichen planus the papillæ of the tongue are flattened while in leucoplakia they may be accentuated. Leucoplakia is infrequent in women, while lichen planus is equally frequent in both sexes. Luetic lesions of the mouth are painful (except plaques of the tonsils which in spite of their extensive development sometimes may be painless), while lichen eruptions are painless. Luetic mucous plaques are situated within a highly reddened infiltrated area, lichen planus is surrounded by perfectly normal mucosa. The syphilitic manifestations show a tendency to erosion ulceration and proliferation.

Xeroderma Pigmentosum. This, according to V. I. Terebinski,[1] is divisible into an exanthematous stage (which may not occur); a pigmented spot stage; an atrophic cicatricial stage with telangiectases; a warty growth stage and a tumor formation stage. The spots coming on the exposed skin look like freckles. The skin is dry, tense, thin and sometimes desquamates. Telangiectasis and white atrophic spots occur and the region affected is mottled. The mouth and eyelids may be distorted. Fissures and eczematous patches occur at times. Wartlike nodules sometimes appear and undergo malignant degeneration. The condition is due to an embryonic dermal state excited by some irritant.

Mucous Membrane Pemphigus. A case was reported by E. M. Cocks[2] of a 37-year-old neurotic v-para whose health deteriorated after a miscarriage. February 15, 1904,

(1) Rousky Vratch, Dec. 2, 1906.
(2) Jour. Am. Med. Assoc., Nov. 24, 1906.

she was first seen. A year previously she had a chill lasting two hours. Later in the day she menstruated. A year later she had a second chill lasting the same length of time. The following morning, on account of the swollen condition of the tongue, she was unable to talk, and swallowed food with great pain and difficulty. Numerous pea-size vesicles were to be seen on the tongue, buccal mucous membrane, pharynx and lips. This condition persisted for two weeks, the older vesicles rupturing, swelling and subsiding. Deglutition became less painful.

The date of her next menstruation was ushered in by a severe chill, followed by a repetition of the first attack, which ran a like course. The third was similar to the two previous attacks, also the fourth, but the menses did not appear the following month. Up to the seventh month of her pregnancy each was a duplicate of the previous month, the patient becoming more and more emaciated. The two weeks preceding the seventh month of her pregnancy she was very comfortable, but on January 14 she had a chill which lasted three hours, with a slight remission. The following day there was not a pea-size space of tongue, lips, buccal mucous membrane, pharynx or nasopharynx that was not the site of vesicles. There were several vesicles on the conjunctivæ. In the vagina were several bullæ; cervix was free. The rectoscope revealed vesicles as far as could be seen. The eighth month was no exception to the rule. The ninth month was ushered in by a chill and in a few hours the patient's tongue was so swollen that at the height of her labor she could not cry out for pain, or laugh for joy at its termination. Two weeks after her confinement she commenced to gain rapidly. This quiescent period lasted three months, then a return of all the symptoms, persistent vomiting and uncontrollable diarrhea greatly aggravated the patient's condition and rapid emaciation and death followed in one week. At no time was there any dermic symptom.

During the height of an attack, the contents of a vesicle situated on the tongue were aseptically drawn into a pipette and proved to be sterile. The contents of a flabby vesicle or one several days old showed numerous staphylococci. The blood at this time showed a leucocytosis of about 10 per cent. Between the attacks the blood was normal. The

urine showed nothing abnormal but indican, which was present during the illness.

Lancing the vesicles of the mouth and touching their bases with an aqueous solution of methylen blue, 20 grains to the ounce, gave the patient considerable relief. Those of the vagina and nasopharynx were not incised but ruptured within three or four days. Small painful ulcerations resulted which did not heal for several days. Although at no time during her pregnancy was she free, by opening the vesicles as soon as they appeared, a fair degree of comfort and health was maintained. Her food consisted of milk, to which cream had been added, eggs and concentrated liquid food. She gained slightly in weight until the fatal attack. She was seen almost daily and arsenic was prescribed and pushed from the first. All known local remedies were tried but methylen blue gave the greatest relief. On necropsy twenty-four hours after death vesicles occluded the nares; they were also present in great number in mouth, on tongue, pharynx and esophagus. The mucous membrane of the stomach was also affected, the intestinal track from the pylorus to anus was involved. The vesicles of the intestines were flatter, and in some places where they had ruptured ulceration to the muscular coat had taken place. There were a few disseminated vesicles on the serous surface of the liver, spleen, intestines and pleura.

This case seems to have been one of pemphigus limited to the mucous membranes, probably due to indican, the result of intestinal fermentation, for which her family physician had treated her for several years, her pregnancy having had little, if anything, to do with her condition, in spite of the fact that her symptoms were worse at her menstrual periods preceding her pregnancy and at the time she would have menstruated if not pregnant.

W. S. Gottheil[1] has reported two cases where the lesions were restricted to the mouth for a long time. One had been referred to him as syphilis. His diagnosis was mercurial stomatitis. It proved to be pemphigus, affecting first the mouth and later the cutaneous surfaces, and finally proved fatal. Dr. Gottheil said he has never seen pem-

(1) Jour. Am. Med. Assoc., Nov. 24, 1906.

phigus limited to the mucous and serous membranes end fatally.

Brown-Tail Moth Dermatitis. Dermatitis from the brown-tailed moth, according to E. E. Tyzzer,[1] is produced by a specialized form of short, barbed spines termed "nettling hairs," but he demonstrates that the actual morbific agent is a toxic substance which greatly aggravates the irritation produced by the penetration of the hairs. The nettling hairs are straight, tapering, needle-pointed shafts, provided with numerous recurrent barbs and measuring on the average 0.1 millimeter in length and 0.005 millimeter in thickness at the larger extremity. No pore is visible in the hairs, but their behavior in regard to staining fluids, and other considerations, make it seem likely that the poisonous substance is contained in a cavity in their interior. They develop in the caterpillar, and are present even in very young specimens. In the process of manufacturing the cocoon, the hairs are rubbed off the caterpillar and enter into the structure of the cocoon, and are also found mingled with the long hairs of the brown tuft on the tail of the moth, though it is probable that they simply become entangled in the scales of the moth as it works its way out through the cocoon, and are thus all primarily derived from the caterpillar. They also occur in the egg masses and in the winter webs, and are blown about in the air.

Reaction of the skin to the nettling hairs varies greatly. When rubbed upon the skin there immediately occurs, with most persons, considerable itching, and the inoculated area rises in the course of fifteen or twenty minutes in the form of a wheal about which there is considerable reddening, changing to white when the skin is stretched. The reaction, however, is not always so prompt. The severest process observed may show nothing for eight hours after the inoculation. The nettling hairs, even when rubbed into the skin, may produce only slight reddening, or perhaps very slight elevation, and practically no discomfort. The dermatitis is of two types, according to the manner of acquisition. If a caterpillar is felt crawling over the neck, and thereupon slapped or crushed, and the part afterward thoroughly rubbed and scratched, a marked local dermatitis

(1) Jour. Med. Research, March, 1907.

develops in which the lesions are confluent. There is local reddening and thickening of the skin with the formation of papules or vesicles, as the case may be. A patient is then likely to seek a physician. If the nettling hairs be distributed by a breeze to underclothes as they hang drying, the dermatitis from wearing these clothes mimicks a scattered urticarial rash. The lesions then are in the form of small discrete papules which, if not scratched, often show at their summit a tiny vesicle filled with clear fluid. They are more numerous on parts of the body where the skin is soft. Warm, muggy weather aggravates the condition, as the epidermis is then kept moist by perspiration, and, becoming softer, favors the penetration of the nettling hairs. The duration is variable. The individual lesions usually heal in from seven to ten days. The severest forms occur during May and June, when the caterpillars reach their maturity.

Larynx Urticaria. This condition is reported by C. E. Cooper.[1] Simultaneously with a sudden attack of urticaria involving the whole surface of the body, the mouth, uvula and posterior pharyngeal wall, the patient was seized with dyspnea, choking sensation and cyanosis. In less than an hour the urticaria had subsided and the dyspnea and cyanosis had disappeared.

"Spider's Lick." This is an East Indian term for an eruption produced by contact with a spider of which D. H. Macphail[2] reports a case. The whole of the affected area —the forearm—was red and raised above the general surface. There were numerous small pustules. There was no pain. Itching was present at first, but soon ceased. A carbolic acid dressing, 1 in 40, was applied and on the following morning the eruption had disappeared.

Erythema Induratum. According to L. Weiss[3] this condition can be diagnosticated from erythema nodosum by the acute character and intensive systemic disturbances of the latter. Its lesions are more superficial, more painful and appear more suddenly, are of brighter color and more inflammatory in their character. They rarely, if

(1) Laryngoscope, April, 1907.
(2) Glasgow Med. Jour., March, 1907.
(3) Jour. Am. Med. Assoc., May 4, 1907.

ever, break down and their absorption takes place in a manner resembling the color changes of a fading contusion. Hence the name dermatitis contusiformis. Erythema induratum has a chronic course, as a rule does not, but may, break down in a few cases; it is not connected with the stormy systemic disturbances and yields a more evanescent pigmentation. Gummata never appear so numerously, neither is their appearance attended by systemic disturbances. A gumma will not exist for months without changing. If absorbed, it is by local or general mercurial treatment. Confusion with lepra, to which erythema induration bears a far-away resemblance, is not very imminent.

Dermic Neuroma. W. E. Darnall[1] reports three cases of this affection. It appears as a multiple hard spindle-shaped mass, varying in size from that of a small pea to that of a walnut, and distributed along the course of a single nerve, or of all the nerves of an extremity, or even the whole body. It originates from the connective tissue of the nerve sheaths and usually contains within its substance a certain number of nerve fibers included by the tumor in the course of its development.

(1) Jour. Am. Med. Assoc., Dec. 1, 1906.

PLATE I.

Pemphigus Gyratus.

Began insidiously in the form of a pruriginous erythema covering a period of two years, in a woman aged 61. Eruption became vesiculo-bullous shortly before the above record was taken, May 24, 1906, when the vesicles assumed almost exclusively a gyrate distribution. A large bullous eruption followed on the heels of this eruption, which in turn was closely followed (June 1 to 15) by a pemphigus hemorrhagicus foliaceous and pemphigus of the mucous membranes. On July 17 skin and mucous surfaces were entirely free from all active manifestations. Patient developed a lobar pneumonia July 24 and died shortly after. Case of Dr. M. L. Heidingsfeld, Cincinnati.

s limited
y.
wn-Tail M
-tailed mo
specialized
hairs," bu
is a toxic
produced
hairs are
ded with no
verage 0.1
ickness at
e hairs, but
ther consid
substance
develop in
young speci
cocoon, the
into the st
gled with the
e moth, thou
ngled in the
ugh the cocoo
caterpillar.
he winter web
eaction of the
en rubbed
h most person
a rises in the
m of a wheal a
changing to
ction, however,
ocess observed
inoculation.
skin, may pr
slight elevati
rmatitis is of tw
isition. If a ca
d thereupon sla
oroughly rubbed

(1) Jour. Med. R

PLATE II.

Impetigo Bullosa.

Case of unusual bullous impetigo contagiosa in a young child; showing rather wide and profuse distribution. Condition promptly improved under a few applications of salicylated sulphur, which usually acts as a specific in these eruptions. Case of Dr. M. L. Heidingsfeld, Cincinnati.

CHAPTER II.

CONSTITUTIONAL RELATIONS OF THE DERMATOSES.

Argyria. In the days of the silver nitrate treatment of epilepsy, this condition was quite frequent. As late as the eighties insane hospitals contained argyria patients treated without success. Argyria thus produced is the central element of the plot of Wilkie Collins' "Poor Miss Finch." It appears from a case lately reported by R. A. Allen[1] that the use of silver nitrate in gastric disturbances is likely to lead to a recrudescence of argyria. His patient, a neurotic woman, subject to intermittent paresis, had been given pills containing silver nitrate for chronic gastric troubles. For two and a half years before coming under Allen's observation the skin of her face changed color and was becoming a peculiar ashen hue. This kept growing in intensity, spreading from the face to the neck and thorax below the breasts. She also complained of numbness and tingling, shooting, prickling pains in the fingers and toes, and some general weakness and malaise.

The most striking feature was the deep slate-blue of her face, which on closer examination proved to be in the skin itself, and could not be due to a cyanosis. The pigmentation was of irregular distribution; that is, it was more intense in some places, as, for example, on the sides of the nose. It also involved the conjunctivæ and the buccal mucous membranes. The slaty color extended all over the face, neck and thorax, fading out at the waist line, and involved the entire skin of the upper extremities. The patient's general nutrition was fairly good. The pupillary reflexes were normal; the knee jerks were somewhat The pulse was full, regular, and of rather increased tension. Respiration was normal, and lung findings were exaggerated. There was hyperesthesia of the extremities. negative. The heart tones were pure.

(1) Med. Record, Jan. 7, 1907.

The silver nitrate preparation was stopped. The treatment directed to the general condition consisted of tonics, nutritious mixed diet, fresh air, exercise and eliminatives. Since withdrawal of the silver, the pigmentation has remained practically unchanged. The pill prescription called for silver nitrate fifteen grains, divided into seventy doses, which would make about one-fifth of a grain to a dose. The prescription had been refilled many times. Argyria under the conditions described might easily be the basis of a successful malpractice suit unless the patient was warned of the silver nitrate dangers. This was always done with epileptics.

Diffusion of Leprosy. This subject was a prominent topic of discussion at the Sixth International Dermatologic Congress. In opening the discussion L. Campana of Rome said that considerations regarding the nature and special symptoms of leprosy led to the conclusion that a mutual understanding should be arrived at among civilized nations concerning the treatment of this disease and its aspects as an evil which affected the individual and society. Local treatment is necessary in leprosy in the initial stages of macular and tubercular symptoms. These can be arrested by radical surgical treatment, followed by cauterization. The most rigorous aseptic and antiseptic treatment of the ever-varying lesions is indispensable, according to the manner in which they developed in the patients, and this is especially the case in the latter stages of the disease.

Tubercular leprosy is a purely local disease of much gravity, and its contagiousness, which has been proved experimentally, is in direct proportion to the shortness of the time that the malady has lasted. Hence the radical treatment of the disease is to destroy its manifestations as soon as they appear. The severe mutilations and the grave febrile and phthisic phenomena which occur in leprosy are the consequences of septic conditions caused by ulceration and trophic changes. Hence the treatment of patients in whom these lesions occur ought to be directed towards diminishing the injurious effects of these trophic changes, more particularly those of the joints, to prevent breaches of surface, and to arrest the continuance of sources of sepsis in the individual patients and in their houses and in leper asylums. When the phenomena of

sepsis occurs the suitable treatment is to attack them courageously, studying when possible the special nature of the various sources of sepsis, and in abating them to bear in mind the unusual condition of the patients in whom they have developed.

D. W. Montgomery[1] of San Francisco finds it frequently difficult to establish the source of the infection of leprosy, and so far as the first evidences of the disease are concerned, the physician rarely sees them. The early symptoms are such that the patient himself does not usually attach much importance to them, and it is only later, when the disease is well established, that medical advice is sought. A long time frequently elapses between the initial symptoms and a well-marked case of lepra.

H. E. Menage of New Orleans said that he recalled cases that had apparently originated from late lesions of tubercular leprosy. Walter Remsen Brinckerhoff of Honolulu, stated that in Hawaii the disease has been kept under control for over forty years by means of segregation. He has been struck by the extreme difficulty encountered in persuading lepers to go into segregation. The popular conception is that a patient enters a leprosarium only to die.

Dr. Campana said the bacilli are found in the early lesions of leprosy, but not after the disease has attained its full bloom. The infectious character of the disease is most marked in its early stages; its virulence gradually diminishes and finally disappears.

Isadore Dyer of New Orleans believes that the bacilli of leprosy become attenuated with the attenuation of the types of the disease. In other words, that the trophic types are evidence of the fact that the disease is more or less effete. The disease spreads gradually, and while it can not be traced from individual to individual, it spreads numerically wherever it has been introduced. The method of isolation practiced in Louisiana has not only reduced the number of cases from year to year, but has reduced it to nearly one-quarter what it was when isolation was commenced. He has come to regard the treatment of leprosy as practically the same as that of tuberculosis. The patient receives plenty of fresh air and sunshine, with

(1) Med. Record, Sept. 28, 1907.

two or three baths daily, as warm as can be borne. In addition to this, they follow the traditional treatment of leprosy, depending mainly on chaulmoogra oil, but in cases where that can not be tolerated in large doses, cod liver oil or some other oil is substituted, with practically equally good results. Under this general method of treatment, after two or three years, some good results have been achieved, and some evidences of the disease removed.

Prince A. Morrow of New York City said that he thinks it is impossible to say whether the bacilli which escape from the lesions of advanced tubercular leprosy are dead or alive. There is absolutely no culture method which can be relied on, nor is there any experimental method. It would be a practical impossibility to isolate cases of leprosy during the early stages, because, in a large proportion of the cases, the disease remains undetected in those stages. It is a matter of general knowledge that leprosy may exist for five, ten, fifteen, twenty, an even thirty years, with positive evidences of disease of the skin in the shape of macules and certain nerve lesions, and still remain unrecognized by the physician.

H. Radcliffe-Crocker of London said that leprosy is by no means a hopeless disease, and in the milder nerve forms of prognosis is fairly good. At all events, the duration of the disease is so long and the symptoms so trifling that they scarcely incommode the patient.

Burnside Foster of St. Paul said that experience has led him to recognize the communicability of the disease, but he believes that it is communicated with great difficulty, that it could be engrafted only on a suitable soil often absent in man.

Intestinal Origin of Leprosy. According to D. Cleft,[1] in certain parts of China, where leprosy is common, there are lepers who sell eatables on the street. They and the food they sell are surrounded by flies, that come in contact with their sores. These flies may settle on fish, which in turn becomes contaminated. It makes, when putrid, an excellent nidus, and if eaten half-cooked some of the bacilli must certainly enter the gastroenteric canal in a living state. Now, if this is true of fish, why is it not true of

(1) British Med. Jour., April 26, 1907.

other eatables? Does not this explain why Hutchinson's theory sometimes appears plausible and at other times appears to break down? The practice of eating putrid fish in a more or less raw condition is not essential to the spread of the disease. The bacilli can reach the intestine through the medium of other food also. Leprosy may be fairly common in a district and yet very little food be eaten there. Comparing the disease with tuberculosis, Cleft notes that in the former the bacilli are carried by leucocytes, which lose their ameboid movement. In leprosy the bacilli have been found occasionally within white blood corpuscles; perhaps the lepra cells were originally leucocytes? The taking of common salt really seems to benefit the patient; this may be because of increased hydrochloric acid, which helps the digestive juices to destroy the germs, and the system is thus relieved from ingesting more living bacilli. Three points leprosy has in common with tuberculosis: There must be a predisposition, natural or acquired, in the patient; both may have a long incubation period; and both are incurable—the patient is said to be "cured" because treatment and environment have "stayed" the disease.

Urticaria and Hypothyroidism. According to Leopold Levi[2] and de Rothschild there are related while chronic urticaria is quite often the dermic localization of an acute intoxication. A woman with enlarged thyroid, menstrual irregularity, lipomatosis, easy fatigue and insomnia, had successive daily urticarial crops.

Dermic Chromatophore and Langerhans Cells. E. Bizzozero[2] finds that the interepithelial chromolluscum fibrosum, which determine the presence of chromatophore cells, are connective tissue cells containing pigment, which have immigrated from the cutis. The structure of the nuclei varies according to the condition of nutrition in which they existed. The nucleus in inflammatory processes may multiply by direct division without any division of the protoplasm, or by indirect division followed by division of the protoplasm. The chromatophore cells progressing toward the surface of the skin may be broken up into minute detritus and the pigment spread in the interepithelial spaces, or

(1) Comptes Rend. LXI, 35, 1906.
(2) Arch. per le Scienze Med., XXX, part 6.

may be gradually destroyed later. In the group of Langerhans cells must be included pigmented chromatophores, unpigmented chromatophores and those whose granules must be brought out by silver nitrate; epithelial cells; migrating cells and nerve cells should be excluded.

Dermic Tubercular Infection. This condition is illustrated in cases reported by T. C. Gilchrist.[1] A tubercular plantar affection containing tubercle bacilli occurred in a person living with a consumptive having insanitary expectorating habits. In another case a patient, working at the same bench with a consumptive, had a scratch over his knuckles, followed by a pimple, which took on the characteristic features of tuberculosis varicosa cutis.

Tuberculide Mimicry of Other Dermatoses. Gilchrist[1] also reports a case of tuberculous tumors of the skin, mimicking erythema induratum scrofulosorum, and a case where a tuberculide mimicked acne necrotica.

Angioneurotic Edema. These and other edemas in children are discussed by H. Schivarz,[2] who reports a case of postscarlatinal general edema without nephritis. This appeared in the second week, during what appeared to be a normal convalescence. It lasted about two weeks, and at no time was there albumin in the urine. The patient made a perfect recovery. The second case was one of giant urticaria, following scarlet fever, after the administration of quinin. There was swelling of the hands, face and feet, occurring one after the other and disappearing rapidly. The urine was and had been perfectly normal. The third case was one of general edema following erysipelas neonatorum. Here the signs of the erysipelas had almost entirely disappeared, and only with the help of the previous history and the condition of the skin (bleb-desquamation, etc.), was the cause discovered. Examination of the urine was negative; recovery in two weeks. The fourth case was one of general edema, following gastroenteritis. The uranalysis was negative. This case was interesting, inasmuch as the child was given a mixture of fennel tea and barley water for three weeks. During this time it had no edema.

(1) Jour. Cuta. Dis., May, 1907.
(2) Med. Record, April 13, 1907.

Then it was put upon a mixture of equal parts of milk and barley water—seven bottles a day and a pinch (10 grs.) of salt in each bottle. In other words, the child received 70 grains of sodium chlorid in twenty-four hours. After being on this mixture for three days the edema began to appear. Very probably the atrocious mixture of fennel tea and barley water and the resulting poor condition of the child had a great deal to do with the edema. The large amount of salt should also be taken into consideration. The fifth and last case was one of angioneurotic, or, better, acute circumscribed edema, in a girl of eleven years. The attacks had been coming since her sixth year—the face, hands and feet being involved at different times. She had had edema of the glottis twice during the past three years. With and without these swellings there were attacks of abdominal pain and vomiting. These attacks lasted from twelve to twenty-four hours. There was no family history. Diet and drugs were without effect in diminishing the frequency or severity of the attacks.

Dr. Attilio Caccini reported the case of a girl, seven years old, who was taken ill and developed general anasarca and died without presenting any kidney lesions so far as the urinary findings were concerned. The examination of the blood showed 7,000,000 red cells and 120 per cent hemoglobin. This was a case probably of angioneurotic edema. A boy, twelve years old, under observation, had attacks which came on with the slightest disturbances of the tonsils or the intestines. There was much itching, especially of the head, neck and chest. After two or three days lumps would appear on his forehead, then all over the head, their size being about that of half an orange. These lumps at times made him appear as a monster. Another case was that of a boy who was suddenly taken with great dyspnea, and, in spite of intubation and tracheotomy, died. At autopsy nothing was found to account for the death except the edema of the larynx. A superintendent of a hospital complained of toothache, and was advised to go to a dentist. For some reason he was given phenacetin, walked from the hospital, and in fifteen minutes dropped dead on the sidewalk. His eyes were so swollen that he was hardly recognizable.

Gastric Disorder and Angioneurotic Edema. S. Loring[1] reports eleven cases in which there was abdominal distress, with more or less distention, due in the first partly to serous effusion, but mainly, in that case and in all the others, to accumulation of gas, followed in a few hours by the eruption, which, though it appeared in different parts, presented in each essentially the same features. None of the patients had suffered previously from a similar attack, no evidence of heredity could be traced in any, and so far none had had a return. The skin was but slightly reddened and there was but little itching.

Untoward Dermic Effect of Atoxyl. J. Snowman[2] reports that a patient, on taking atoxyl, had amaurosis, dermic edema and hyperkeratosis. Dragging pains in the extremities were noticed also.

Veronal Dermatitis. This condition, reported by W. House,[3] seems to be an erythema rather than a dermatitis. Fifteen grains of veronal produced sound sleep, followed by vertigo and stupor. The patient's body on retiring exhibited no dermal abnormality, was covered with an extensive eruption, symmetrically distributed. The face appeared red, swollen and congested. On the back of the thorax the skin was hyperemic and tense, as in severe scarlet fever, and appeared as angry as does erysipelas. The front of the body and the arms and legs presented an eruption of blotches ranging in size from a quarter to a half dollar, separated by spaces averaging an inch. The center of each was a dark red papule, surrounded by a less intense raised area, shading rather sharply into normal skin. The whole appearance was that of a severe bee sting or spider bite. Most of the blotches were circular in outline on the body and oval on the limbs. About the axillæ the eruption was absent, the skin by contrast appearing curiously white. The itching was intense. At 3 p. m. the temperature had risen to 103 F., the pulse to 112, and the general appearance of the patient suggested severe toxemia. The temperature subsided to 99 F. by the following morning, rising to 100 F. in the afternoon, and returning to normal the next day. Meanwhile the rash and toxic symptoms grad-

(1) New York Med. Jour., Aug. 17, 1907.
(2) Lancet, April 27, 1907.
(3) Jour. Am. Med. Assoc., April 20, 1907.

ually disappeared, so that all that remained were a number of small petechiæ marking the sites of the larger lesions.

His former physician has witnessed a similar eruption and toxemia after giving his five grains of veronal and repeating it in three hours. The patient took the same drug at a still earlier period with identical results.

Herpes Simplex and Herpes Zoster. These are discussed by J. F. Schamberg,[1] who draws the following conclusions: Herpes zoster and herpes simplex—both the facial and the genital varieties—while not clinically identical, are closely related. Histology of the dermic and the observed changes in the nerve structures appear to be practically the same. The vast majority of cases of herpes of the various types probably result from a toxin. The frequency of herpes simplex in certain infectious diseases and its rarity in others is evidence that the toxin must possess certain peculiar qualities in order to exercise a selective affinity for sensory nerve structures. The toxins producing herpes simplex and herpes zoster are in all probability not the result of the action of any specific microörganism. The three diseases in which an "herpetogenic" toxin develops with a fair degree of constancy are pneumonia, spotted fever and malaria. Its frequency in these diseases and its comparative rarity in typhoid fever and many other infectious maladies make its appearance a symptom of considerable diagnostic import. In view of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions, the fact as to such a history should always be elicited before according to herpetic outbreaks the diagnostic value referred to.

Varicella Dermic Histology. E. E. Tyzzer[2] states that the study of varicella lesions, excised from adult Filipinos, shows that the initial change consists in the appearance of peculiar eosin-staining inclusions within the nuclei and cytoplasm of epithelial and various other cells. Direct division of nuclei without subsequent division of the cytoplasm is associated with these inclusions. Cells undergoing these changes often become enormous during their degeneration. After these cells changes the typical varicella process con-

(1) Jour. Am. Med. Assoc., April 13, 1907.
(2) Jour. Med. Research, January, 1906.

sists of a rapid destruction of small areas of the epidermis associated with exudation and vesicle formation. The development of the vesicle is attended by the formation about the epithelial cells of numerous fibers. A certain number of lesions are infected by bacteria, as the result of which they become pustular. In such lesions there is more or less destruction of the papillary layer, which accounts for the scars frequently following an attack of varicella. A conclusion has not been reached concerning the nature of specific inclusions in varicella, and no important evidence has been found in favor of the hypothesis that they are parasitic organisms. Inoculations of the cornea of the rabbit and the skin of the monkey with the contents of varicella vesicles have in all cases yielded negative results.

Varicella Mimicing Varioloid. A case occurring in the practice of Dr. E. Wood Ruggles, of Rochester, N. Y., illustrates the mimicry of varioloid by varicella (Plate 3.) The patient was a 34-year-old man who was in Dallas, Texas, from February 28 to March 2, a time when there were three hundred cases of variola there. March 5 to 8 he was in New Orleans, at a time when smallpox existed. He arrived in Brooklyn, N. Y., March 13, to find a 10-year-old daughter in the second day of an attack of varicella. March 25 he felt ill. March 26 the eruption appeared and became so intense that Dr. Ruggles was sent for and took the photographs (Plate 3.) on March 28 and 29. The patient on March 27 had a temperature of 103° F. and a pulse of 100; on the 28th the pulse was 86 and the temperature 100.5° F.; on the 29th the pulse was 70, temperature 98.9° F.; on the 30th, pulse 68, temperature 98.3° F. The eruption, which itched considerably, was much more tense than usual. Many vesicles had a shotty feel, there were a great many umbilicated. There were several lesions on the feet and palms and several in the mouth. For two days he was decidedly ill, but after that improved rapidly.

Pruritus. According to F. H. Barendt,[1] this condition, like most neuroses, is intimately associated with the borderland between health, *i. e.* ease, and disease, and varies in intensity, not only in individuals, but also periodically

(1) Scottish Med. and Surg. Jour., July, 1907.

in the individual and with the sex of the individual. That some people are more sensitive, *i. e.* itch more readily, than others, and vice versa, is a truism. Indeed, the mere mention of a flea, or the sight of any crawling creature, for example, an ant (formica), is sufficient to start an impulse to scratch—an example of pruritus (formication) where the cause is obviously psychical.

Skins of other patients may be bespotted with flea-bites yet no pruritus result. Pruritus is either intra- or extradermal; both shade into each other. The extradermal group comprises mechanical irritation, such as pressure of clothes, chemical irritants, sweat, soap and water, etc., and the various animal and vegetable parasities. The intradermal group includes variations in blood pressure, hyperemia and stasis, vascular alterations (*e. g.* varix in all degrees) and toxic states of the blood (*e. g.* icterus and diabetes mellitus, arsenic, etc.).

In many diseases, pruritus as cause and scratched skin as effect become so intimately associated that a vicious circle is established, and clinically it may be impossible from the skin affection to diagnose whether the pruritus preceded or followed its evolution. In eczema of the lower third of the leg in a patient who has varicose veins, the stagnant blood pressing on the terminal fibrils produces the pruritus which causes the scratching, and this latter, in turn, the eczema. Or it may be some external irritant causes a small breach of the elevated epidermis, leading to exposure of nerve endings, which results in pruritus and subsequent scratching. Whatever the exciting cause may be, scratching increases and extends the area in which pruritus is felt. The relief that scratching often brings to a pruriginous area is a result of the numbing of the cutaneous nerves produced by capillary distention and exudation. When these subside, the nerves regain their function, and a repetition of the clinical phenomena takes place. Pruritus increases and decreases in intensity, and, if unrelieved by scratching, may disappear for varying periods.

On the other hand, local pruritus may diffuse itself, so to speak, over an area far from the original site. Consciousness is not necessary to pruritus, and patients may continue to scratch while asleep; it is only in intense

pruritus, *e. g.* that accompanying scabies, that the act of scratching, being irresistible, hinders repose. Pruritus being determined, both in extent and in severity, by the amount of scratching that is done, as well as by the environment of the patient, accessibility of the scratching hand, or heel or toes, to the pruriginous area explains how certain areas are more scratched than others.

Furthermore, the method of dress may account for this. In pediculi on the pubes, the itching produced is most pronounced in males, and the scratching is sometimes so severe that in killing the pediculi by mercurial ointment the scratched skin passes simultaneously into acute dermatitis. The scratching here is clearly dependent on the accessibility of the scratching hand to the seat of irritation. In the female, however, pruritus vulvæ due to pediculi does not often come under observation. The mons veneris may be teeming with pediculi while the itching complained of is due to pediculi in the axillæ, no itching of the vulva is admitted by the patient, and no scratched skin is to be detected on examination. The intense itching has nearly always been in the axillæ. Here the accessibility of the scratching hand was determined by the method of dress, and apparently the intensity of the pruritus depended on the severity of the scratching. In men, pediculi attacking the axillary regions are of much less frequent occurrence.

Owing to the difference of buttoning the dress, in man more maculæ coeruleæ are present on the left inguinal region than on the right, and in women the right axilla showed similar superabundance over the left. These blue spots, pea in size, are pathognomonic of the presence of the crab-louse. They are produced by the salivary secretion of the insect. In left-handed patients in pruriginous eruptions, where universal, the scratched regions that are most typical are on the opposite side to those seen in right-handed patients.

In adults, intense pruritus should always make us suspect the presence of scabies. This disease, of which our knowledge is complete—in striking contrast to other skin affections; for we know its etiology, its pathology and its treatment—is one which, experienced clinicians state, sooner or later we are apt to overlook or misinterpret.

PLATE III. Varicella Simulating Varioloid.—Ruggles, Rochester, N. Y. (page 28).

PLATE IV.

Lichen Planus Vesiculosus.

Case of diffused, widely distributed lichen planus, with split-pea sized vesicles richly distributed over the confluent areas of eruption. Many of the vesicles were filled with pus or dried to crusts. Photograph taken indoors, 1-10 second exposure, with a quartz vacuum mercury Kromeyer lamp. Case of Dr. M. L. Heidingsfeld, Cincinnati.

Such a contingency is more likely to occur with patients who are more regularly clean than those who only are so spasmodically. The primary eruption consists of the familiar burrows with vesicles; the secondary eruption is due to the results of the vehement scratching, and insemination of pus organisms into the skin lesions thus produced; hence the term scabies pustulosa applied to the severe, and always chronic, form of the affection.

The universal scratching originating in the local sites of the primary eruption is a good illustration of the diffusion of the sensation of itching all over the integument. For not only at the site, but in ever-widening circles, does the scratching hand roam, so that in typical scabies there is scarcely a region of the body which does not plainly show scratch-marks and other efflorescences. In obscure cases, especially where the webs of the fingers fail to yield evidence, the nipple area in the female, and the penis in the male, should never be overlooked. The soft, delicate skin of these regions is a particularly favorite site for the burrows of the itch-mite, and scratch lesions in the vicinity, even if elsewhere ill-defined, should at once lead to the diagnosis of and treatment for itch. It is the neglect to examine these regions in obscure cases that so frequently leads to wrong diagnosis, for, as it sometimes happens, scabies is seen in those in whom, *prima facie,* it would not be expected. Syphilis and scabies are from time to time to be seen in the same patient. Kaposi would scarcely admit any other method of conveyance of scabies except by actual skin-contact in bed. Careful attention to the favorite sites of the burrows, along with the presence of other accompanying signs of syphilis, will clench the diagnosis of the disease.

After middle age always look for sugar, especially where the skin is dry and harsh to the touch. In women, pruritus vulvæ has, as a rule, produced, through scratching, intense dermatitis, and it is frequently the skin lesion that necessitates their seeking medical advice. The itching is so intense that the severest form of eczema affecting the genital and feminal regions in women are often due to diabetes. At times the pruritus may be general, and the ensuing dermatitis has been regarded as eczema; it is only after examination of the urine that the true cause has

been discovered. Pruritus is one of the earliest indications of diabetes mellitus.

In the aged, phthiriasis is often the cause of intense pruritus; its effects are mimicked by arsenic. In the late epidemic of arsenical beer poisoning, the skin of many of the habitual drinkers produced the impression that they were suffering from phthiriasis of long standing, and not displaying the effects of chronic arsenic poisoning. The number of cases of morbus reorum admitted to the unions in Lancashire was truly astonishing until the discovery was made of arsenic in the beer they had taken.

In phthiriasis, patients refer their itching to some blood-state. This shows that the state of the skin is abnormal, being chiefly deficient in grease. The inunction of lanolin alone, and stoving the under-garments, has effected a cure; although, as is well known, the best remedy is unguentum hydrargyri ammoniati. As the aged feel the want of heat more than the young and robust, the body vest is frequently not removed at bedtime. It is important to insist on a change in this respect, for it is surprising how such a point may be overlooked by the medical adviser, and naturally ignored by the patient, who resumes his body vest after treatment, while carefully stoving his flannel shirt.

Peliosis Rheumatica. This condition existing in a boy of 13 is reported by W. W. Williams.[1] The boy was attacked by rheumatism in one knee; two days afterward spots appeared on his leg. Later on the right cheek was affected, together with a swelling of the eyelids and brow. Various other areas became involved. The joint trouble became polyarthritic, the boy had gastric and abdominal pain, and finally on the eighth day a free hemorrhage from the bowels, while he also spat blood. The gums were not spongy and did not bleed readily. On the following day the fever, which had run up to over 102° F. (mouth), disappeared. The urine showed no blood or albumin. The joint and abdominal pains disappeared and he was altogether better. During convalescence urticaria appeared on the trunk and right leg, freely sprinkled with purpuric petechiæ. The illness lasted one month. The remedies were sodium salicylate for the rheumatic symptoms and

(1) British Med. Jour., Jan. 12, 1907.

calcium lactate in 10-grain doses for the bowel hemorrhage.

Seborrhea. This condition, according to Leslie Roberts,[1] rests on the anatomic basis of the follicle. The follicle is as a recess in the surface of the skin, which is connected with two growing points, namely, the hair bulb and the sebaceous "gland," the recess being completely filled up by the formed products which are thrown off, or exfoliated, by these growing points. These formed products are hair and sebum; both consist of cells with keratinized walls. In the one case the cells are welded together so as to produce the firm structure we know as hair, and, in the other, they are massed together into a plastic body of indefinite shape, owing to the preponderance of fatty matter. This amorphous mass of fatty keratinized cells is what everybody knows as sebaceous matter or sebum. But it does not appear to be commonly understood that this sebaceous matter is the accumulation of a free exfoliation of the cells lining the acini of the sebaceous gland, and that there is perfect anatomic continuity between the early and final stages in the metamorphosis of the living germinal cells into the fat cells. Thus sebaceous matter is no more to be regarded as a secretion than the hair or the cuticle. This process of exfoliation is one of the fundamental characteristics of the epidermis, and the three final modes of its expression are: 1, Hair growth; 2, steatidrosis, or normal seborrhea; 3, desquamation of the cuticle.

These forms of exfoliation are so exquisitely balanced that no two of them can ascend without the remaining third descending. Thus if the sebaceous gland hypertrophies, the sebum is increased in consequence, and, what is so curious and so interesting, the hair bulb diminishes, and the hair is less in consequence. The converse is also true if the hair bulb enlarges—the hair is increased and the sebaceous gland tends toward atrophy. The follicles which contain minute downy hairs are connected with voluminous sebaceous glands, and those which contain large strong hairs are weak in their sebaceous glands.

At puberty the sebaceous glands awake from their infantile lethargy and assume ampler proportions. This is commonly associated with a corresponding fall of hair. In the

(1) Liverpool Medico-Chir. Jour., January, 1907.

been discovered. Pruritus is one of the earliest indications of diabetes mellitus.

In the aged, phthiriasis is often the cause of intense pruritus; its effects are mimicked by arsenic. In the late epidemic of arsenical beer poisoning, the skin of many of the habitual drinkers produced the impression that they were suffering from phthiriasis of long standing, and not displaying the effects of chronic arsenic poisoning. The number of cases of morbus reorum admitted to the unions in Lancashire was truly astonishing until the discovery was made of arsenic in the beer they had taken.

In phthiriasis, patients refer their itching to some blood-state. This shows that the state of the skin is abnormal, being chiefly deficient in grease. The inunction of lanolin alone, and stoving the under-garments, has effected a cure; although, as is well known, the best remedy is unguentum hydrargyri ammoniati. As the aged feel the want of heat more than the young and robust, the body vest is frequently not removed at bedtime. It is important to insist on a change in this respect, for it is surprising how such a point may be overlooked by the medical adviser, and naturally ignored by the patient, who resumes his body vest after treatment, while carefully stoving his flannel shirt.

Peliosis Rheumatica. This condition existing in a boy of 13 is reported by W. W. Williams.[1] The boy was attacked by rheumatism in one knee; two days afterward spots appeared on his leg. Later on the right cheek was affected, together with a swelling of the eyelids and brow. Various other areas became involved. The joint trouble became polyarthritic, the boy had gastric and abdominal pain, and finally on the eighth day a free hemorrhage from the bowels, while he also spat blood. The gums were not spongy and did not bleed readily. On the following day the fever, which had run up to over 102° F. (mouth), disappeared. The urine showed no blood or albumin. The joint and abdominal pains disappeared and he was altogether better. During convalescence urticaria appeared the trunk and right leg, freely sprinkled with purp petechiæ. The illness lasted one month. The re were sodium salicylate for the rheumatic symptor

(1) British Med. Jour., Jan. 12, 1907.

calcium lactate in 10-grain doses for the bowel hemorrhage.

Seborrhea. This condition, according to Leslie Roberts,[1] rests on the anatomic basis of the follicle. The follicle is as a recess in the surface of the skin, which is connected with two growing points, namely, the hair bulb and the sebaceous "gland," the recess being completely filled up by the formed products which are thrown off, or exfoliated, by these growing points. These formed products are hair and sebum; both consist of cells with keratinized walls. In the one case the cells are welded together so as to produce the firm structure we know as hair, and, in the other, they are massed together into a plastic body of indefinite shape, owing to the preponderance of fatty matter. This amorphous mass of fatty keratinized cells is what everybody knows as sebaceous matter or sebum. But it does not appear to be commonly understood that this sebaceous matter is the accumulation of a free exfoliation of the cells lining the acini of the sebaceous gland, and that there is perfect anatomic continuity between the early and final stages in the metamorphosis of the living germinal cells into the fat cells. Thus sebaceous matter is no more to be regarded as a secretion than the hair or the cuticle. This process of exfoliation is one of the fundamental characteristics of the epidermis, and the three final modes of its expression are: 1, Hair growth; 2, steatidrosis, or normal seborrhea; 3, desquamation of the cuticle.

These forms of exfoliation are so exquisitely balanced that no two of them can ascend without the remaining third descending. Thus if the sebaceous gland hypertrophies, the sebum is increased in consequence, and, what is so curious and so interesting, the hair bulb diminishes, and the hair is less in consequence. The converse is also true if the hair bulb enlarges—the hair is increased and the sebaceous gland tends toward atrophy. The follicles which cont[illegible] downy hairs are connected with voluminous [illegible]s, and those which contain large strong [illegible] their sebaceous glands.

[illegible]e sebaceous glands awake from their infan[illegible]d assume ampler proportions. This is com[illegible] with a corresponding fall of hair. In the

likely to arise from seborrhea in the infant is the scalp. This becomes covered with greasy yellowish scales, and if the fatty products are not removed they are quickly infected with micrococci. A condition of impetigo may be grafted on the seborrhea. If the irritation reaches the capillaries an inflammatory reaction follows. This is the usual origin of infantile eczema of the scalp, the "crusta lactea" of the ancients.

The first indication of the increased activity of the sebaceous glands of the face is the elevation of the orifices of the follicles above the level of the surrounding skin and an increase of the surface oil. The face shines and has a spotted appearance. If the quantity of fat is great, drops of oil may be compressed from some of the follicles. A varying proportion of the follicles are marked by a black dot, corresponding with the position of the mouth of the follicle. The follicle itself may not be elevated, but if pressure be properly applied a solid mass of plastic matter can be expressed. It has somewhat the shape of an egg, broader in the middle than at its two ends. This is named comedo, and its form indicates the shape of the outer third of the follicle from which it has been pressed out.

The comedo differs from the contents of the non-comedic follicle in the solid condition of the fat and in the thicker keratine walls of the cells. If the comedones are sufficiently abundant to form the leading feature of the case, the disease is acne comedones. How it happens that certain of the follicles undergo this cystic dilatation and the fatty products thicken into the comedo, science does not yet explain. The "acne bacillus" will not solve the problem, for this is indistinguishable from the microbacillus of Sabauraud, and swarms in the fatty contents of all the follicles, whether they be comedic or not. The cause may be in the blocking of the orifice, which would lead to increased pressure on the ascending stream of fatty cells. So long as the comedones and the seborrheic filaments remain sterile no further complications arise. But this is seldom the case, for sooner or later the comedo is decomposed by the swarming of the microbacillus. The acne now enters on the inflammatory stage. The formerly pale, flat comedo is now raised into a papule or nodule, and burns with a dull red light; a yellow spot appears around the black dot, which indicates that the follicle has suppurated.

Pustular acne is merely an accidental phase of seborrhea. It might be named seborrhea with secondary inoculations, for the appearance of the red zone around the follicle, and later its pustulation, is by no means an essential part of the acne, and merely indicates that the contents of the follicles are decomposing.

Loss of hair in the region of the scalp is a common event at puberty. This is a direct consequence of the seborrhea; is not to be confounded with those which are due to infection. This mortality among the hair bulbs is not always apparent at puberty; it may be delayed if the growth of hair be naturally vigorous, but it never fails to appear sooner or later after the seborrheic tide has set in.

The infective consequences of seborrhea of the scalp occur with much lower frequency than those of the face. Pityriasis is not uncommon, and it may take the fatty or the dry form. In the latter the scales resemble particles of mica, and this form is not always accompanied by loss of hair. The fatty variety of alopecia is of commoner occurrence than the dry form and is more liable to secondary inoculations. The growth of staphylococci in the fatty products is indicated by impetigo in some children and by eczema in others.

It is, when the sebaceous glands are at the full height of their power, this which affords the greatest variety of seborrheids and which exhibits the effects of seborrhea in their severest forms. These forms are:

1. Alopecia, diffuse and circumscribed, with atrophy of the hair bulbs and the lower two-thirds of the follicles.
2. Rosacea, or a progressive paresis of the walls of the capillaries surrounding the degenerating follicles.
3. Infection of the follicles with microbacilli and staphylococci; decomposition of the fatty products.
4. Pityriasis, diffuse or in patches.
5. Eczematization.

Wide and far-reaching are the consequences of seborrhea. And, first, about the loss of hair. It is inevitable, for in the dual struggle between the hair bulbs and the sebaceous glands the latter are always victorious. The fate of the hair lies in the power of the gland. As to when the baldness begins to be obvious, either early in life or late, depends on hereditary influences. Seborrheic per-

sons are born with the tendency to seborrhea; all through life their sebaceous glands are morbidly active, and dominate the other tissues, often to their injury. It is especially in neurotic individuals that seborrhea is apt to evoke the symptoms of alopecia areata, and hence in countries inhabited by people with a highly developed nervous organization alopecia occurs in high frequency.

The onset of rosacea is at about thirty years of age, but it is prone to occur any time between this and the menopause, and especially at the latter period. It may persist for many years after menstruation has ceased. Women with rosacea are not always dyspeptics, and the stomach has only an indirect influence even in the worst cases. The uterus also plays but a side-part in the pathogenesis of the disease. If the stomach be at fault the fact is indicated by flushing of the face after meals, accompanied by a sensation of burning, and this is generally worse in the evening.

Rosacea has no connection with acne, with which, however, it is often confounded; comedones are usually absent, or one here and there may indicate the acne of former years. There are three symptoms of rosacea:

1. Progressive congestion of the capillaries in the sebaceous area of the face.
2. The shining of the countenance.
3. Secondary inoculations of the follicles.

The first two of these are invariably present and the latter usually, but varying much in its extent. The congestion is indicated by a carmin tint, which is usually suffused over the face, forming a pattern which corresponds with the distribution of the sebaceous glands. The hue is deepest on either side of the middle line of the face, and gradually pales towards the ears. From the center of the forehead it passes down the nasolabial folds, spreads over the nose, and downwards on both sides, involving the entire chin, and in severe cases sweeps over the cheeks, and even, in some cases, across the neck.

The region beneath the eyes remains white and unaffected, even in the worst cases, for this is a nonseborrheic region and embryologically is in closer sympathy with the eye than with the face. If the face be observed more closely the suffused carmin tint is marked by spots and

streaks, very often the streaks radiating out from the spots, of a fuller and deeper carmin tint. These are the dilated capillaries surrounding the sebaceous glands. The patches of infiltration, with demarcating outlines, such as are in lupus erythematosus, are absent. The only line we get in rosacea is the thin soft line between the carmin tint of the cheeks and the white suborbicular skin.

The shining of the surface is very obvious in rosacea. No perfect skin shines over wide areas, for nature has devised means to prevent it. If the surface of the skin be carefully observed it will be seen to consist of myriads of minute facets of a smooth, shining aspect, and each is surrounded by grooves which emit a pale red light of much lower luminosity than the white light reflected from the facets. This device is due to the soft and beautiful tints of the body, especially of the face, which in health should be luminous without luster. But in rosacea the grooves and the facets are coated with oil, which reflects the light like a polished surface.

The secondary inoculations are very characteristic of rosacea, and are especially prevalent on the chin. The follicles are elevated, and have a dull carmin tint, with a higher admixture of blue rays than is usually associated with folliculitis. The epidermis over the papule is usually broken. The follicles may suppurate or become indurated from dense infiltration.

Sacral Pigment Spots in Infants. According to C. Herrman[1], sacral pigment spots occur in many races. In Japan, where 90 per cent of the infants showed these spots, these macroscopic appearances were discovered over one hundred years ago. The first histologic examinations of sections from the skin were made by Baetz in 1885. In 1903 Adachi came to the conclusion that the characteristic pigment cells which were found in the deeper layers of the corium in these cases would be found also in white infants, even though they presented no visible spots. He examined a series of sections, therefore, from twenty-four white infants and found the characteristic pigment cells in ten. He suggested that a careful examination of a large series

(1) Med. Record, March 16, 1907.

of white infants would probably reveal the presence of visible spots in a few.

Fujisawa, then attached to the clinic for diseases of children at Munich, found the spots in the fiftieth infant examined. In this he was fortunate, for the spots really occur in about 1 in 400. In 1906 Ebstein of Prague published a paper, "The Blue Spots in the Sacral Region and Other Mongolian Peculiarities in European Infants;" the peculiarities described were those of Mongolian imbecility. The sacral spots are to a certain degree characteristic of the Mongolian race in so far as they occur in a very large percentage of their infants. The Mongolian imbeciles were so called by English writers from a certain superficial resemblance of their features to the Mongolian type. But they were not in the true sense of the word Mongolian.

Ashmead, in 1905, published a paper on the spots as they occurred in dark races, but made no mention of their appearance in white infants. The spots occurred in a number of widely separated races in Japan and China, Java, Malay Peninsula, Hawaii, Greenland, etc., and were probably present in all dark-skinned races. They were also present in apes, and in them were of much larger size. During the last eighteen months Dr. Herrman had examined about 1,800 infants. The spots were present in five—that was, about 1 in 400. In all these the hair and iris were dark.

In negro infants examined in Dr. La Fetra's service at the Vanderbilt Clinic the spots were present in 30 per cent. and were more distinct in those cases in which the parents were entirely dark-skinned. The spots were most frequently found in the sacral, lumbar and gluteal regions, and occasionally on the upper part of the back, shoulders or the anterior surfaces of the extremities, but very rarely on the face; in one case they were found on the inner surface of the thigh. According to one author they appeared as early as the fourth month of embryonal life. They were present at birth and sometimes became more distinct during the first few weeks; after that they grew fainter and disappeared at the end of the second year, and occasionally, when in an unusual situation, they persisted for a longer time.

In white infants there was commonly a single spot, in

negro infants several. Their size varied from that of a dime to that of the palm of the hand. They were circular, elliptical or irregular in outline. In white infants they were of a grayish blue color, not unlike a tattoo mark; in negro infants there was often a more greenish tinge. They were not raised above the lever of the skin, did not change in appearance on pressure, and the outline could sometimes be made more distinct by putting the skin on the stretch. There was no growth of hair on the surface and no indication of blood-vessels. On microscopic examination of the skin the coloring was found to be due to the presence in the deeper layers of the corium of large spindle-shaped or star-shaped cells filled with dark brown pigment granules, not unlike those in the chorioid.

These cells were present in small numbers in about 40 per cent of white infants, but only in one case in 400 were they in sufficiently large numbers and sufficiently closely grouped to produce a visible spot on the skin. The spots were easily differentiated from hemorrhages and vascular or pigmented nevi by their characteristic situations, color, absence of hair or blood-vessel formation, and by the fact that they were not raised above the surface, did not change on pressure, and tended to disappear at the end of the second year. The last point was worth noting, for as they occasionally occurred on the face, the question of surgical removal might come up. Why the spots should occur with so much greater frequency in the sacral region was not known, but it was worth mentioning that this region was to a certain extent a point of least resistance, as was shown by the occurrence of developmental anomalies, spina bifida, dermoid cysts, and the other tumors.

Dermatoses and Climate. J. M. Blaine,[1] Denver, Colo., has noted in an experience extending over eleven years in Colorado, that the dry climate of that region has a direct influence on certain skin diseases. Eczema, for instance, is manifested most frequently in the dry form, erythematous and papular eczema being most common. Acne is more common than on the coast, but it yields to treatment quickly. Psoriasis is likewise more frequent than in sea-level districts and is more difficult to treat. Pustular conditions

(1) Colorado Med., September, 1906.

are comparatively uncommon. Lupus erythematosus is rather frequent, but is favorably influenced by treatment. Lupus vulgaris is rare. The cases seen are usually imported. Epithelioma and other degenerative conditions are common. Leukoderma is seen rather frequently. Diseases of the sweat glands are rare. Urticaria, erythema, hypertrichosis and pruritus are frequent conditions.

Weather and Psoriasis have important relations, according to H. W. Stelwagon. A patient may be treated during the winter without benefit. About May or June, at the approach of warm weather, when the disease shows a natural tendency to improve, he perhaps makes another change in his physician, and under almost any remedy the eruption often disappears. Stelwagon advises young men who suffer from psoriasis to reside in a warm climate, because the disease, as known in the north, is extremely persistent and rebellious; and while it may be temporarily relieved, a recurrence is very apt to take place.

Negro Racial Dermatosic Aspects. The subject was discussed before the Sixth International Congress. Howard Fox of New York City concluded in the opening paper: In spite of the fact that the negro is more susceptible to disease in general than the white man, and that his mortality is twice as great, he suffers less frequently and less severely from diseases of the skin. The negro skin is decidedly less susceptible to external irritants. The full-blooded negro is almost immune to ivy poisoning. Acne is is less common and much less severe in the negro. Rosacea is a rare and very mild affection. Eczema is, perhaps, not less frequent, though certainly less severe. Psoriasis in the full-blooded negro is very uncommon. Tuberculides are not more common in the negro, in spite of the great prevalence in this race of pulmonary and other forms of tuberculosis.

The negro is more subject to new growths of connective tissue origin and less so to those originating in epithelial structures. Cutaneous epithelioma is very rare in the full-blooded negro. The mucous membranes, as well as the skin, are less susceptible to disease. Leucoplakia is seen in the negro with extreme rarity. Many of the rare forms of skin

(1) Med. Record., Sept. 28, 1907.

disease are observed in the negro, as well as in the white race. Mulattoes are more susceptible to skin diseases than negroes, being especially prone to chloasma.

Isadore Dyer of New Orleans said the social condition of the negro in the South is vastly inferior to that of his Northern brethren, and for that reason a comparison of the statistics between these two sections of the country is of little value. In the South the negro as a rule does not apply for treatment for a skin condition unless it is disfiguring or causes him suffering. It is not unusual to have a negro present himself for some venereal disease, and reveal, on examination, a variety of parasitic and other skin lesions.

Erythema Nodosum and Arthritis. According to J. G. Symes[1] these are not as frequently associated as has been claimed. Only 10 per cent of the cases give a history of chorea, endocarditis or arthritis.

Multiple Dermo-Neurotic Gangrene is reported by Ludwig v. Szollosy[2] in a twenty-year-old girl. An ulcer appeared on the back of the left hand, followed during three years by ulcers on the upper arm, breast, thighs and feet. Suggestion during hypnotic sleep resulted in recovery.

(1) British Med. Jour., June 21, 1907.
(2) Münch. med. Woch., May 21, 1907.

CHAPTER III.

THERAPY OF THE DERMATOSES.

Herpes Zoster Pectoralis. The treatment for this condition advised by J. V. Shoemaker[1] is as follows: It is always well to make sure that the bowels are well cleaned with a calomel purge, followed by a saline purge. Diaphoretics are essential to stimulate the skin to its normal functionation. Opiates, bromids or chloral may sometimes be necessary to relieve pain. This patient, after having had the calomel purge as stated before, will receive a capsule containing:

℞
Pulveris ipecacuanhæ et opii.....gr. xxiv
Extracti sumbulis .....
Ammonii valeratis .....āā gr. xx
Salicini ..... ʒ i
M. et ft. capsulæ no. xx.....
Sig.: One capsule every three (3) hours.

Externally apply a cloth saturated with a solution containing:

℞
Tincture opii .....f. ʒ ii
Alcoholis absoluti .....f. ʒ iii
Aquæ q. s. ad.....f. ʒ xvi
M. et sig.: As directed.

The cloth, of course, is kept moist all the time and allowed to evaporate, which will produce a cooling as well as an anodyne effect. This lotion will also assist in the drying up of the vesicles and cut short the progress of the disease.

Psoriasis. This subject looms up prominently in dermatologic literature. The usual error of the illogical therapeutist is apparent. The fact that an agent potent for good must, as J. G. Kiernan[2] has shown in his study of untoward effects of drugs, try inherited and acquired

(1) Columbus Med. Jour., May, 1907.
(2) Medical Standard, 1891.

constitutional defects severely, has been ignored. This is excellently illustrated in Crocker's[1] discussion of the indications of thyroid extract in psoriasis. When first introduced by Byron Bromwell the usual, illogical specific claims were made for it, and as a result the usual reports of dangerous, untoward effects followed. For lack of study of the individual constitution, uncertainty of its indications followed. Crocker has found that thyroid extract should not be given when the eruption is developing, nor in elderly persons nor in individuals with heart disease. Here a threatening thyroidism often develops. It should be given in small doses, gradually increased. Salicin is Crocker's preference. He begins with 15 grains, thrice daily after meals, gradually increased until 20 grains and even more are taken.

Treatment in psoriasis, according to the *Journal of the American Medical Association,* should deal with the general health of the patient. Diet should receive particular attention. G. H. Fox[2] has "rarely seen a patient with chronic psoriasis who had not observed the fact himself or could demonstrate after the matter was suggested to him, the fact that during the free use of meat the psoriatic patches invariably became more congested. In the catabolism undergone by the proteid or albuminous element of food will doubtless be found, in time, the precise origin of the autotoxins which underlie many of our common skin diseases." In close connection with the use of meat are the indications that a gouty origin may be assigned. Saline cathartics, such as Epsom and Rochelle salts or the artificial Carlsbad salt (*Sal Carolinum factitium effervescens* of the National Formulary) will be found useful. Alkalies are recommended. Stelwagon combines arsenic with alkalies as follows:

℞. Liquoris potassii arsenitis.....f℥ii-iii 8-12
Liquoris potassi hydroxidi....f℥iv-f℥i 15-30
Aquæ menthæ pip, q. s. ad.....f℥iii 90

M. Sig.: A teaspoonful in half a tumblerful of water after each meal. It is well to begin the administration of

(1) Clinical Journal, March 6, 1907.
(2) Jour. Cuta. Diseases, quoted in Jour. Am. Med. Assoc., June 8, 1907.

the liquor potassi arsenitis (Fowler's solution) in much smaller doses.

℞. Liquoris potassii arsenitis.....f℥ii 8
Liquoris potassii citratis.....f℥viii 240
M. Sig.: Two teaspoonfuls after meals.

Tonics are frequently required, in which case the alkali may be given separately and arsenic combined with other tonics as recommended by Shoemaker:

℞. Acidi arsenosi.....gr. i |06
Quininæ sulphatis.....gr. xl 2|6
M. Ft. pil. No. xx. Sig.: Take one pill after meals.

Or:

℞. Sodii arsenatis.....gr. i |06
Extracti hyoscyami.....gr. v |3
Extracti gentianæ.....gr. xx 1|3
M. Ft. pil. No. xx. Sig.: Take one pill after meals.

Sometimes the author finds that the value of the arsenic is much enhanced by giving both quinin and strychnin with it, as in the following combination:

℞. Quininæ sulphatis.....gr. xxx 2|
Acidi arsenosi.....gr. i |06
Strychninæ sulphatis.....gr. ss |03
Aloini .....gr. 1 |06
Extracti belladonnæ.....gr. iii |19
M. Ft. pil. No. xl. Sig.: Take one pill after meals.

Local applications for psoriasis are numerous. Shoemaker recommends Wilkinson's ointment, which is official in the National Formulary as Unguentum Sulphuris Compositum. Liquor Picis Alkalinus (N. F.) is also a useful preparation. Tinctura saponis viridis composita is recommended. Vleminck's solution, liquor calcis sulphuratæ and Rochard's ointment are effective especially in inveterate cases, although they produce considerable suffering. Rochard's ointment is made as follows:

℞. Iodi .....gr. xl 2|6
Hydrargyri chloridi mitis.....ʒss 2|
Unguenti .....ʒxiv 55|
M. Ft. unguentum.

Shoemaker recommends an ointment for the removal of scales made according to the following formula:

℞.	Ammonii carbonatis	3iiss	10
	Adipis lanæ	3vi	25
	Unguenti aquæ rosæ	3xii	50
M.	Ft. unguentum.		

Stelwagon states that chrysarobin is the most powerful local remedy in the treatment of psoriasis, and that, if properly used, it frequently removes the eruption. He advises its employment as a powdery film or as a paint, the latter being less active. Its efficacy may be enhanced by the use of salicylic acid.

When used as a powdery film the drug is mixed with chloroform, from 1 to 2 drams (4 to 8 gm.) to the ounce (30 gm.); or it may be used as a saturated solution, chloroform taking up about 40 grains (2.65 gm.) to the ounce (30 gm.). The patches are freed from scales and freely painted over—giving two or three coats. The chloroform evaporates and leaves a thin layer of the powder. To keep this in place Stelwagon applies over it a few coatings of either plain or flexible collodion or a mixture of the two. New appliances are made as necessary. As soon as the tendency to scaliness ceases and the skin of the patches become pale and normal, the applications are discontinued.

Stelwagon states that this method is generally successful with large, stubborn patches. Staining of the surrounding skin follows the applications, but to a less extent than when chrysarobin salve is used.

When chrysarobin is used as a paint it is prescribed in collodion or in solution with gutta-percha, 48 grains (3.2 gm.) to the ounce (30 gm.). Fox recommends adding salicylic acid, but this is not comfortably borne by individuals with delicate skins. The following formula is recommended by Stelwagon:

℞.	Chrysarobini	3i	4	
	Acidi salicylici	gr. x-xx		65-1.3
	Aetheris	f3i	4	
	Olei ricini	m. v		33
	Collodi q. s. ad	f℥	30	
M.	Sig.: Apply to the psoriatic patches.			

This is less apt to stain the clothing and surrounding parts, Stelwagon states, if a coating of plain or flexible unmedicated collodion be painted over it.

These and other remedies must be applied after a thorough removal of the scales, which may be effected by an alkaline bath, using from 2 to 6 ounces (60 to 180 gm.) of sodium carbonate, borate or bicarbonate to the bath. Stelwagon recommends sal ammoniac in the same proportion as much more efficient.

According to Sabouraud[1] the treatment of psoriasis by eukeratosinics and keratolitics is most valuable. The drugs usually employed are tar products, especially oil of cade; oil of juniper, ichthyol, salicylic acid, resorcin and chrysarobin. They are employed in the form of ointments, in solutions or dissolved in traumaticine (solution of gutta percha in chloroform). The delicate question is to adapt the strength to the resistance of the skin so that it is necessary to proceed cautiously. Combinations give the best results:

Oil of Cade	dr. iii.
Oil of Birch	dr. ss.
Lanolin.	
Vaseline	āā dr. iv.
Ichthyol.	
Resorcin	āā gr. xvi.

or,

Oil of Cade	dr. iiiss.
Oil of Birch	dr. ss.
Lanolin.	
Vaseline	āā oz. dr. iv.
Resorcin.	
Ichthyol	āā gr. xvi.
Mineral Turpeth.	
Pyrogalic Acid	āā gr. xvi.

Five to eight grains of chrysophanic acid may be added to this ointment or 16 grains of chrysarobin. This will make it more active, but pyrogallic acid may produce albuminuria and chrysophanic acid may cause a special erythema.

Cade oil ointments have a disagreeable odor, so the following may be substituted:

Oxid of Zinc	dr. iss.
Chrysarobin	gr. xvi.
Mineral Turpeth	gr. xvi.
Vaseline	oz. i.

(1) Le Monde Med., October, 1907.

Chrysarobin can be used in traumaticine in the proportion of 1 in 10, or chrysarobin dissolved in chloroform 1 in 10, applied with a camel's hair brush.

Psoriasis, according to L. B. Bulkley,[1] is not a purely local dermatosis, but has important constitutional relations. It is not a parasitic dermatosis, but may be caused by growth of some ordinary microörganisms, which take on a pathogenic action when the soil is suitable. Psoriasis cannot be cured permanently by local treatment. Properly directed this may remove existing lesions which are likely to return. Where local treatment seems to be followed by success the eruption may be seborrheic dermatitis, which sometimes closely resembles psoriasis. Heredity is relatively unimportant. Psoriasis is not a late manifestation of syphilis. There is no one tangible internal cause of psoriasis, though the faulty metabolic changes at the bottom of every case may be induced in many ways. Repeated thorough volumetric urine analysis is a valuable aid in determining treatment in different cases and at different times. No one internal remedy is universally of value in psoriasis, although arsenic is the single agent of most service in the greater number of instances. Arsenic is safe, if properly used, and may be taken for a long time with only beneficial results. It commonly requires to be employed in conjunction with other internal measures, or alternated with them. In acutely developing psoriasis it often acts badly, increasing the eruption. Alkalies, properly used, often are of great value. Avoidance of meat, or an absolutely vegetarian diet, sometimes will be attended with freedom from the eruption. Psoriasis is an exceedingly chronic and rebellious disease, and effective internal measures must be continued for a long time, generally for at least two years, to ensure a cure. Local treatment is of the greatest value in the removal of the eruption, but its success should not interfere with proper internal measures, even when no eruption exists. The eruption may disappear under internal treatment without local measures.

Bacterial Vaccines in Dermatology. According to R. W. McClintock[2] these are indicated in localized, subacute or

(1) Jour. Am. Med. Assoc., Nov. 17, 1906.
(2) Illinois Med. Jour., July, 1907.

chronic infections in which accurate bacteriologic diagnosis is possible and which are characterized by a positive chemotaxis; non-existence or previous or simultaneous removal of other factors tending to produce insufficient resistance; a lowered opsonic index for the infecting microörganism.

Abortion of Furuncles. This is best secured, according to Vikentiec,[1] by rubbing the part first with tincture of green soap and then washing it off with a 50 per cent. alcohol solution. A thin compress of absorbent cotton moistened with alcohol is then kept in place until the alcohol has evaporated, then more green soap tincture is applied and the lather allowed to dry on the spot which remains uncovered.

Zinc Perborate in Eczema. This treatment has been found of value by Herheimer and Apsen.[2] It is contraindicated in acute eczema and in weeping eczema; it is used in the form of salve or paste containing 2 to 25 per cent. of the salt.

BOSTON MEDICAL LIBRARY JAN 12 1914

Hydrogen Peroxid in Impetigo. Carriere[3] advises that the crusts be first cleaned off by means of a potato starch poultice (borated), or simply by compresses of salolated gauze, moistened with decoction of walnut leaves. This is to be covered with rubber cloth and renewed three times a day, and also just before going to bed. When the crusts are removed hydrogen peroxid (10 volume) is applied on gauze and covered with rubber. This dressing is renewed each twenty-four hours. Under this treatment 60 per cent. recover in less than five days. Recovery may be hastened by intestinal disinfection with fractional doses of calomel.

Acne. The *Journal de Medecine de Paris,*[4] recommends a 10 per cent. ointment of naphthol kept on for half an hour to one hour, after which it is removed and the surface washed with soap and water. On the next day slight reaction or desquamation is observed. The application is then repeated. In eight to fifteen days desquamation is complete. No cicatrix is produced. If there should be too much skin irritation an emollient can be applied. In obstinate cases 10 per cent. of camphor may be added

(1) Rev. prat. de obstet. et de gyn., March, 1907.
(2) Arch. f. Derm. u. Syph., lxxxiii.
(3) Jour. de Med. de Paris, Jan. 13, 1907.
(4) Jour. de Med. de Paris, Jan. 13, 1907.

PLATE V.

Pustular Scabies of the Hands.

Marked pustular eruption on the hands of a child accompanying a moderate widely distributed case of scabies of three months' duration. The lesions of scabies in young individuals are prone to become pustular. Case of Dr. M. L. Heidingsfeld, Cincinnati.

to the naphthol, but the application should then be made for a quarter of an hour only. Another formula is:

℞. Resorcin ..... 2.5 parts
Zinc oxid ..... 5 parts
Starch ..... 5 parts
Petrolatum .....12.5 parts
M. This ointment is allowed to remain on the affected part for a day and a night, at the end of which time it is removed with oil.

Scabies. A cure in one and a half hours is said to be attainable by the following procedure of Sabouraud.[1] The patient is first rubbed for half an hour with black soap (green or soft soap) and then takes an alkaline bath for half an hour. After coming out of the bath the entire surface of his body is to be well rubbed with:

℞. Oil verbena.
Gum tragacanth, of each.....1 part
Precipitated sulphur .....100 parts
Glycerin .....200 parts

A final bath is then taken, lasting from fifteen to twenty minutes. The clothing and body linen must be disinfected. During the fortnight succeeding this treatment four baths of starch water are given. In case of irritation zinc oxid is used.

Nastin in Leprosy. Deycke and Reschad,[2] who in the Gulhane Hospital of Constantinople have abundant opportunities for observing lepers, describe the steps by which, after experiments extending over more than two years, they have produced a therapeutic agent of great value in leprosy. This substance, a crystallizable fatty body, to which, on account of its firm consistency, the name "nastin" (close-pressed) is given, is derived by a process of ether extraction from cultures of a variety of streptothrix obtained from a case of leprosy. The fatty substance in question appears, like the fatty component of the tubercle bacillus, to render the organism more resistant

(1) Bull. gen. de therap., Nov. 20, 1906.
(2) Med. Record, May 12, 1907.

to the bacteriolytic powers of the body fluids. On injecting it subcutaneously into normal individuals no reaction is produced, but in lepers bacteriolysis seems to be markedly favored. The nastin causes an active immunity whereby the body fluids acquire an increase in antibodies hostile to the specific organism of leprosy. This reaction is possible in leprosy because, owing to the extremely chronic nature of the malady, the general powers of resistance are not impaired to any great extent during the earlier stages of the disease. The nastin injections are not of value in the severest cases, but by this means it is possible to arrest the disease process in slight or moderately severe cases and in some instances to effect an actual cure. So far their results have been obtained from the unaided use of the new remedy, but now, having satisfied themselves of its value, they are about to combine its administration with the usual therapeutic measures.

Iodoform Oil in Leprosy. The use of this medicament is urged by Diesing,[1] who uses hypodermics of one part iodoform to three parts of olive oil. All mild, uncomplicated cases and a large percentage of the severe were cured by this treatment. He makes the injections at different parts of the body each time, injecting 0.005 c.c. at first, gradually increasing to 2 c.c., and repeating this standard dose daily for fifteen or twenty days, suspending it for a few days if symptoms of intoxication appear, such as loss of appetite, weakness and pallor, or if the organism is saturated with iodoform, which is noticeable in the odor. In most cases a month's treatment completes the cure. The treatment is not adapted for patients with brain troubles, as the iodoform is liable to induce maniacal attacks in them. It is also contraindicated in leukemic conditions and in case of weak heart action, in which iodoform aggravates the condition.

Ichthyosis. W. A. Jamieson[2] lays great stress on promoting exfoliation of the unduly adherent and effete horny cells in this affection. He recommends resorcin combined with glycerin, in union with starch, which forms a bland, persistent, soothing and softening medium with

(1) Deuts. med. Woch., Nov. 26, 1907.
(2) British Med. Jour., Feb. 16, 1907.

resorcin. He advises a medicated soap, and a super-fatted one with which resorcin and salicylic acid are incorporated because this prepares for subsequent glycerinization. The internal administration of cod-liver oil, in small doses at night, is of some service.

Lupus Erythematosus. Campana and G. Lanza of Rome, in a discussion before the sixth International Dermatological Congress, made the following statements:

1. That lupus erythematosus often becomes an incurable disease under the treatment at present generally used.
2. That there are cases of lupus erythematosus on which tuberculin acted in the same way as it acted on true lupus.
3. That there are some cases not cured under the most active surgical treatment, but which are afterwards cured with surprising ease by the use of mercury ointment, which has been recommended by Hebra as most efficacious, although not proving so in practice in many instances.

One must be guided by an analysis of the conditions in order to distinguish the special peculiarities forming the basis of the disease in each case. To begin with an injection of tuberculin and get no local or general reaction would certainly assign the case to a basis quite other than the tuberculoid predisposition accepted by many, but not admitted by all in lupus erythematodes. To begin with local and general treatment with mercury and obtain no apparent improvement therefrom would not predispose one to continue that method of treatment. In cases where the mercury had failed, and the tuberculin had given a positive reaction, local surgical treatment was possible; where the contrary happened, and the physician in charge had not attempted precautionary tests, local treatment was injurious and even disastrous. A third remedy mentioned was small, continued doses of quinin sulphate.

Milton B. Hartzell of Philadelphia said that in a certain number of cases of lupus erythematosus it is difficult to make the differential diagnosis between that affection and lupus vulgaris, and it is quite possible that a large proportion of the cases in which the reaction is obtained are in fact lupus vulgaris rather than lupus erythematosus.

Stafford Taylor of Liverpool, England, finds pyrogallic acid the remedy most successful in lupus erythematosus.

In the common or stationary types of the disease he uses a ten per cent ointment of pyrogallic acid in the same way as he uses it in lupus vulgaris.

Samuel Sherwell of Brooklyn has, in cases where the mucous membranes were not involved, almost invariably obtained excellent results by the use of the curette, followed by the application of the acid mercury nitrate.

Herman Lawrence of Melbourne, Australia, is in favor of scarification, followed by rubbing in iodoform, and then the application of a waxed india-rubber pad under moderate pressure.

Erythematous Eczema. In this disease, according to J. V. Shoemaker,[1] the patient should be kept at rest in bed, and allowed only milk diet. Calomel 2 gr. (0.13 gm.) is given in doses of 1-10 gr. (.006 gm.) every half hour; this is followed by the administration of magnesium sulphate, 1½ oz. (45 gm.). In addition, the patient is given internally wine of antimony, 10 m. (0.6 gm.) every three hours in water. The following combination to allay itching is applied with a sponge:

℞.	Creosoti.....m. x	0	6
	Magnesii carbonatis.....3 ss	2	0
	Zinci carbonatis præcip.....3 vi	24	0
	Glycerini.....f. 3 i	4	0
	Liquoris calcis.....f. 3 iv	16	0
	Aquæ hammamelidis.....q. s. ad. f ℥ i	32	0
M.	Ft. lotio.		

Erythema of Infants' Buttocks. Erythema, according to Pelin,[2] is generally due to contact with urine and acidity of the stools, so that it is first necessary to modify the latter and produce neutral or alkaline evacuations. Alkaline mineral waters, such as Vichy water or sodium bicarbonate, may be given with each feeding, and the author considers them superior to limewater. Intestinal antiseptics, such as naphthol, etc., are also useful. Feeding, also, must be supervised. Locally, washing should not be too frequent, and sterilized water with sodium bicarbonate (a dessert-spoonful to a pint) should be used, or else emollient

(1) Nashville Jour. Med. and Surg., April, 1907.
(2) British Jour. Children's Diseases, March, 1907.

infusions of marshmallow or elder. Talc which has been sterilized is a useful local application, and may be combined with oxid of zinc. If the erosive character be very marked a liniment of lime and olive oil—such as is used for burns—may be employed, while over the worst abrasions, flexible collodion may be painted. The author considers the use of vaselin or lanolin as without any advantage, and dislikes starch-powders, which can easily ferment.

Face Dermatoses. L. Jacquet[1] points out that through the intermediation of the vagus and sympathetic, irritation is transmitted from the stomach to the nerves of the face. The face is the reflection of the stomach far more than the tongue. Irritation from the stomach affects the trigeminal and first cervical group of nerves. They in turn act on the tissues, distending the vessels, heating and making the face shiny from the hyperfunction of the over-stimulated glands. This more or less constant irritation leads to exhaustion of the glands and tissues. There is no need to invoke bacteria or toxins, irritation from the stomach alone being sufficient to explain the greasy, pimply, thickened aspect of the skin. The whole trouble arises from irritation of the stomach mucosa from defectively chewed and more or less hastily swallowed food. He usually puts his patients on a fractioned milk diet as the best means to spare the stomach mucosa and to break up the habit of rapid eating. When this is accomplished —and not before—he massages the face, taking up the tissues through the entire skin and squeezing them between his fingers for several minutes. He then kneads the skin alone, proceeding systematically from the center to the periphery, the whole, a gradual mechanical excitation, commencing gently and increasing the force until, at the end of a week or two, he is applying his entire strength. With these simple measures dyspeptic disturbances are banished and the face is rejuvenated.

Diabetic Dermatoses. M. Morris[2] emphasizes the importance of treating the underlying constitutional state in this condition. Locally, daily alkaline baths are said to be particularly useful. Weak solutions of potassium

(1) Presse Méd., No. 44, 1907.
(2) Practitioner, July, 1907.

permanganate or sodium borate should alsc be applie several times a day, and the parts should be powdere with some soothing powder, such as bismuth, or oxid o. zinc, and contiguous surfaces should be kept apart with muslin bags. When the acute symptoms subside apply a weak resorcin ointment. Ulcerated surfaces and gangrenous conditions must be dealt with in the usual manner.

Pruritus. According to L. D. Bulkley[1] the treatment of pruritus involves constitutional and local measures. Constitutional treatment includes: (1) Dietary and (2) medicinal. Dietary measures certainly are of importance in the class of autotoxic and nervous cases, and also more or less in those of the last class, in which the itching is due to active skin lesions. The internal medicinal treatment of itching may be considered under four heads: (a) General; (b) neurotic; (c) analgesic; (d) hypnotic.

General: General treatment naturally does not relate to instances of itching from purely local causes, although even in some of these cases a thoroughly proper general medical treatment will often render the skin less sensitive to local irritants; for it must be remembered that lowered general and nervous vitality predisposes the skin, as any other organ, to disorder and disease. Many a case of dermatitis seborrhœica will manifest itching of the scalp or elsewhere on each occurrence of dyspepsia, and prickly heat occurs only when the patient is in a deranged condition of health. But in regard to a large number of patients complaining of itching, belonging to the last two groups in the general classification presented, internal, general or special, medicinal treatment is of advantage in removing the systemic or organic difficulty causing the unnatural sensations in the skin. This, of course, relates to the proper treatment of the various diseases attended with itching, and cannot be entered on here, but it is hardly possible to emphasize this too strongly.

Neurotic: In neurotic patients general treatment is often of the greatest service and absolutely necessary in many cases, for it must be remembered that, as neuralgia is a nerve cry, indicating a lowered vitality in some portion of the nervous system, so itching may often be a

(1) Jour. Am. Med. Assoc., July 27, 1907.

signal of diminished nerve resistance to external or other irritants, calling equally loudly for help. In aggravated or prolonged itching, therefore, great attention should always be paid to therapeutic measures which restore the nervous system to a normal state and maintain it so. Arsenic may sometimes be of value in connection with other remedies, but alone it is powerless to allay itching. The various proper nerve tonics, iron, strychnin, quinin, preparations of phosphorus, cod liver oil, etc., may each and all of them alone and combined be needed in many cases to effect the desired result. Electricity in the form of static or galvanic current is also of value when properly utilized, and *x*-rays are sometimes of value in arresting itching.

Analgesic: Analgesic internal medication at times may be of great value in the treatment of itching, but is also very often greatly abused, especially when employed empirically or without the use of proper measures to remove the cause of the pruritus. It is well known that opium and morphin are worse than useless, for while insensibility to the suffering may be produced thereby, they really aggravate the cutaneous irritability and in the end do much harm; if sleep is thus induced the patient scratches while asleep, and on awakening experiences even more pruritus. In very rare cases a whiff of chloroform has been of service in producing insensibility, so that other measures can act; but in the end, if repeated, this also does harm.

Hypnotic: Many of the recent coal-tar and synthetic products have been recommended to give relief from itching, and frequently they will have a more or less beneficial effect; but they must be used with great caution, and frequently the subsequent results are unsatisfactory and even harmful: Oftentimes trional has certainly aggravated the real trouble. The same was true after some of the other so-called analgesics. Veronal, Bulkley has used often in repeated doses, with good effects. Other observers have noted very serious untoward effects from it. It causes the same dermatoses as sulphonal and trional. A combination of chloral and bromid of potassium, with a little aconite added, will often act well. Tincture of cannabis indica in controlling itching, if judiciously used, is often of value. Tincture of gelsemium, repeated every hour, or

even every half-hour, for three or four doses, very frequently gives perfect rest.

Local Treatment: Local measures which may be employed with advantage for the relief of itching belong to two classes: (1) Hygienic, and (2) medicinal. Proper hygienic treatment of a skin affected by itching is very important, and, unless correctly attended to, the condition may not yield even to otherwise good treatment. Many, who have the facilities for it, bathe the skin far too much and often keep up a pruritic state. The normal skin should have a certain amount of greasy or oily secretion, and when this is too frequently removed by bathing and free use of soap the surface becomes dry and harsh, and its abundant nerves are thereby irritated. Unless caution is given and directions are insisted on, those in the better classes of society will surely transgress in this particular. Also in drying after bathing, patients will exercise too much friction, and then the overstimulated and excited skin will give occasion for more or less scratching, and the trouble is prolonged in spite of the best treatment. The skin should be dried, whenever a bath is allowed, by soft old hand towels, not ordinary bath towels, a number of them being used, which have been thoroughly heated.

The kind of underclothing is also sometimes of consequence, although its importance is frequently overestimated. Most skins are better with pure woolen garments next to them, if the texture is fine and unirritating, although I find that a number do well with the linen mesh undergarments. Cotton is undesirable, and I do not ordinarily favor silk. If all other treatment be correct, and the skin properly cared for, many persons can wear woolen underclothing who previously thought it impossible.

Restraint from scratching comes properly under this head and is, of course, particularly desirable in the case of infants with eczema. Here Bulkley puts the child inside a small pillowcase, the head protruding through a hole made in the closed end. This is pulled down to the shoulders, and the arms are secured at the sides by means of several strong safety pins, and one pin is also fastened between the legs, so that the whole wrapping cannot be raised. Time and again mothers have expressed the warmest ap-

preciation of this device, which has completely controlled the child and allowed proper applications to cure the eruption. It is well to remember here what was previously said in regard to the spasmodic character of itching, that it often ceases if the part is not touched or scratched. A good apparatus consists of celluloid shields fastened at the shoulders which prevent the child from reaching the part affected.

The external applications which more or less control pruritus as a symptom may be divided into those which are (1) soothing and (2) analgesic; both of these are used in the form of lotions and of ointments. The calamin and zinc lotion, so widely known, is one of the best mild, soothing applications in many pruritic conditions. The formula which Bulkley employs is as follows:

℞.	Phenol (acidi carbolici)	3ss-3i	2.4
	Pulv. calamin. prep	3i	4
	Zinci oxidi	3ii	8
	Glycerini	3iii	12
	Aquæ calcis	3i	30
	Aquæ rosæ q. s. ad	3iv	120
M.	Sig.: To be sopped repeatedly over the surface.		

Ichthyol in from 10 to 25 per cent. solution, in water or oil, will often act very efficiently; it is also very valuable in ointments. Liquor picis alkalinus is also serviceable. It is made as follows:

℞.	Picis liquidæ	3ii	8
	Potassii causticæ	3x	40
	Aquæ	3iv	15
M.			

The potash is dissolved in the water and rubbed up with the tar in a mortar until perfect solution is effected. This is to be diluted in varying strength, one part to ten or twenty of water, and bathed over the surface, a suitable ointment being applied afterward.

Lead and opium wash is often employed and occasionally will be found effective, but as a rule it does not answer as well as other remedies.

Ointments are constantly employed to relieve itching, and if properly constructed and efficiently applied answer well, although often annoying to the patient. For rather

mild general itching a carbolized compound lanolin ointment is valuable, made as follows:

℞.	Phenol (acidi carbolici).....gr. xx-xl	1	30-2.60
	Lanolin	ʒi 30	
	Boro-glycerin	ʒiv 15	
	Unguenti aquæ rosæ.....	ʒiii 90	
M.			

This is applied with the palms and gently rubbed in until absorbed. A mixture of camphor and chloral is very efficient, made thus:

℞	Chloral hydrate	
	Camphor gum, of each.....	ʒss-ʒi 2-4
	Rub together until liquid and add:	
	Compound lanolin ointment (as above).....ʒi	30
M.	Sig.: To be gently rubbed in.	

If there are any raw surfaces this will sting considerably, but on the unbroken skin it is very comfortable and allays itching greatly. Many skins do better without any greasy application, and the glycerite of starch can be substituted in the above ointments for the fatty base. Tar and the tarry preparations, oil of cade and oleum rusci, are also valuable antipuruitic remedies, and may be freely used without danger of absorption.

Pilocarpin in Pruritus. This drug is advised by J. J. Reid[1] in the treatment of pruritus vulvæ and other forms of this affection in doses of from $\frac{1}{8}$ to $\frac{1}{4}$ grain.

Ivy Poisoning. Crude sulphur in ivy poisoning is, according to C. G. Amende,[2] an unusually successful remedy. Its application is best made by mixing it with a little water, and perhaps a few drops of glycerin, this to be rubbed over the affected area two or three times a day. Next best is its use mixed with just sufficient lard to bind it.

(1) Med. Record, May 25, 1907.
(2) Med. Record, March 16, 1907.

CHAPTER IV.

RADIOTHERAPY.

Roentgen Ray in Prostate Enlargement. P. Haenisch[1] advises the following procedure: The patient assumes a partial knee-elbow position, the trunk resting on an adjustable, cushioned support, and the arms and elbows on a lower cushion. The Roentgen tube is on an adjustable standard and folding arm, centering the rays in a lead glass speculum fastened in the rectum. Thus the patient reclines comfortably and if he moves, cannot be injured, while the tube does not become uncentered.

Radiotherapy in prostate hypertrophy is indicated, according to Tausard and Pleig,[2] in cases in which urinary retention is not reached; in young subjects in cases of retention in which urination is possible by catheter only, but which do not require rapid cure; where the bladder is infected, and in senile and nephritic cases.

Roentgen Ray in Cutaneous Epitheliomata. C. M. Williams[3] thus summarizes the results in eleven cases:

No.	Age	Site	Last Treatment	Last Report	Result
1	41	Temple	Mar. 27, 1903	Sept. 10, 1906	No recurrence after 3 yrs. 5½ mos.
2	78	Front of ear.....	May, 1904	Aug. 19, 1906	No recurrence after 2 yrs. 3 mos.
3	59	Lower eyelid	Jan. 28, 1904	Sept., 1905	Died. No recurrence after 1 yr. 8 mos.
4	76	Cheek	Mar. 20, 1904	Sept. 12, 1906	No recurrence after 2 yrs. 6 mos.
5	61	Cheek	.....	Aug. 22, 1906	No recurrence after 3 yrs. 9 mos. in one spot; fresh outbreak at another point soon after healing at the first.
6	76	Cheek	Oct. 20, 1903	Jan. 10, 1906	Died. No recurrence after 2 yrs. 3 mos.
7	40	Cheek	Jan. 2, 1903	Aug. 29, 1906	Recurrence after 7 mos. in corner of scar, now progressing very slowly.
8	81	Nasolabial fold..	Oct. 19, 1903	Aug. 21, 1906	No recurrence after 2 yrs. 10 mos.
9	75	Nose	Sept. 16, 1903	Sept. 8, 1906	Recurrence after 2 years just below scar; progressing very slowly.
10	64	Skin of upper lip.	July 15, 1903	Aug. 17, 1906	No recurrence after 3 yrs. 1 mo.
11	41	Lower lip	Aug. 17, 1904	Aug. 29, 1906	No recurrence after 2 yrs.

(1) Am. Jour. Med. Sci., July, 1907.
(2) Ann. d. Mal. d. Org. Gen.-Urin., Dec. 15, 1906.
(3) Med. Record, Dec. 8, 1906.

The Roentgen Ray in Eczema. The *x*-ray, according to R. H. Boggs,[1] is not necessary in acute eczema unless it be to control the pruritus, otherwise unrelieved, nor in most forms of subacute eczema. It is, however, useful in many chronic cases rebellious to treatment. The good effects are most marked in the squamous form. It requires more intense radiation to relieve the pruritus, and there is a greater tendency to recurrence than in any other form of the disease. After a few applications the discharge and itching cease and the desquamation is arrested. In weeping eczema the desquamation usually ceases after four treatments. In eczema of the legs, with varicose ulcer, radiation should be entirely different in application from that employed in the squamous form, as there is marked difference in the vitality of the tissues. The rays here relieve the eczematous condition, greatly increase local metabolism, and assist the other methods of curing the ulcer.

Action of Roentgen Rays on the Genitals. According to P. Ancel and P. Bowen[2] the *x*-rays act on the testicle to cause disappearance of the external, or seminal, secretion while the internal secretion is preserved. Both external and internal secretion of the ovaries are affected. The *x*-ray may so affect the testicle as to destroy the power of procreation, but has no effect on the sexual characteristics. On the ovaries it so acts as to affect both.

Sterility from the Roentgen Ray. Transitory azoöspermia and sterility from the Roentgen ray is reported by A. Laquerriere[3] in a 32-year-old physician who since 1900 had been exposed to the *x*-ray for about an hour a day. Several times during experiments he had remained for several hours in succession in the near proximity of the focus-tube. In 1901 he began to suspect that he was sterile, as his mistress remained without children without any apparent cause. She subsequently bore children to another man. In 1903 he married and remained sterile. He still continued to use the *x*-ray, but in 1905 he began to use shields and other precautions to guard against the irradiation, however, partially and intermittently.

(1) New York Med. Jour., April 27, 1907.
(2) Presse Méd., April 6, 1907.
(3) Arch. of Roentgen Ray, April, 1907.

PLATE VI.

Lupus.

Lupus recurring after two years' *x*-ray treatment.—Post-Graduate Hospital (Baum).

Laquerriere advised him to use Gaiffe's caoutchouc and bismuth apron, and a sort of leaden umbrella. During September he was not exposed to the *x*-ray. In October the spermatic secretion was examined, under conditions, however, which were not very satisfactory. Certain highly refractive corpuscles were found having the appearance of the heads of spermatozoa, but with no trace of any vibratile tails. In several specimens only two filaments were met with having the appearance of the tail of a spermatozoön. He then agreed not to approach a live focus-tube under any pretense without being shielded by the caoutchouc-bismuth apron. During the succeeding months various microscopic examinations were made of the semen. A very few dead spermatozoa were found. These gradually became more numerous. In December a fair number of corpuscles without vibratile cilia were discovered, with a certain proportion of living spermatozoa. At the end of January his wife became *enceinte,* and pregnancy pursued its normal course. As in Lapowski's case, it required four months after the removal of the cause for the spermatozoa to return to their normal condition.

Tailless spermatozoa are a temporary arrest of spermatozoa development. Cases of this kind are far from infrequent. One which came under the observation of the editor was cured by the interruption of *x*-ray work by a European pleasure trip.

X-Ray in Urticaria Pigmentosa. F. H. Jacob[1] reports a case of urticaria pigmentosa in a child who had fair hair and blue eyes. The rash first appeared on the abdomen, eight days after vaccination, at the age of 4 months. The distribution of the rash was over the chest, abdomen and limbs. On the back its distribution and extent was similar; it involved the neck. The face, hands and feet were free. On the trunk the lesions ran in oblique lines in its girdle axis. The individual lesions were macules, and although a number could be felt with the eyes shut, this was due to temporary turgescence. In color they were a deepish brown with a tint of yellow, in shape oval. Turgescence of the old lesions on irritation and factitious urticaria were very marked. Itching was slight. The child was in

(1) British Med. Jour., June 1, 1904.

all other respects healthy and gave a normal blood count. The child had three exposures to the *x*-rays at intervals of a week, the total dose being insufficient to produce any visible reaction. For six months from this date both factitious urticaria and turgescence of the old lesions on irritation ceased, and no new lesions appeared. At the end of this period the old symptoms returned, but were again removed by three doses of *x*-rays, and remained absent after three months.

Heliotherapy in Psoriasis. This form of treatment is urged by M. Guile,[1] who advises the following procedure: The patient's head being shaded, different parts of the back are exposed to the sun, the position being changed from time to time. The spring sunshine acts well. The exposures are from 20 to 50 minutes. Abundant perspiration is set up, which is increased by wrapping the patient, after a sunbath, in a linen sheet. Hydrotherapy is then used followed by a half hour's walk. Cutaneous heat or itching at first occurs which disappears later.

Heliotherapy in Vitiligo. Lily F. Carpenter[2] reports the case of a 38-year-old spinster, who, when in good health, found a white spot on the back of her right hand; another one then came on the back of the left hand. These patches rapidly increased in size, until they were each about as large as a half dollar, very irregular in shape, with sharply indented margins. Soon the back of the fingers became mottled and a similar spot came on the left arm. As it was summer time and the patient was staying in the country, where she was most conveniently situated for this treatment, a daily sun-bath, each morning, of from one to two hours' duration, was ordered. The sun's rays were to be received directly on the bare skin, part of the time on the back, shoulders, arms and hands, then turning in such a way as to receive them on the chest, abdomen, arms and hands. Shoes and stockings were to be taken off so that the feet might be exposed to the sun's rays. The head was well protected by a broad-brimmed hat. After a few weeks of this treatment, however, a few tiny, pale freckles could be observed on the white area. After two

(1) Berlin klin. Woch., Nov. 17, 1906.
(2) Cincinnati Lancet-Clinic, April 6, 1902.

months' continuance of these sun baths the spots had largely disappeared and no new ones had appeared elsewhere. The patient then returned to her city home, where sun baths were rarely possible, but the improvement continued.

Toxic Effects of Radiotherapy. The *x*-rays have a much more extended action than was at first admitted by commercial *x*-ray practitioners. That there are marked metabolic changes resultant on this very potent alterative which will result in systemic intoxication where either renal or hepatic insufficiency, or both, exist, has already been shown. Edsall and Pemberton[1] report three cases in which a most severe reaction occurred after one exposure to the rays. Two of these ended fatally, while the third patient became profoundly ill, but ultimately recovered. Fortunately studies of the metabolism had been made in two of these patients, before the application of the *x*-rays, and the alterations were thus determined at the time of the reaction. In one case the *x*-rays were applied for the treatment of a pernicious anemia, the exposure being brief and of mild intensity. Within a few hours the man became violently ill, there was a chill, the temperature rose to 103.4° F., the pulse became rapid and weak, and general prostration was marked. During the following week there was some improvement, but the change was slight and three weeks later the patient died.

The second patient presented the typical lesions of rheumatoid arthritis, and *x*-ray exposures were ordered for the treatment of the joint conditions. Only one was given, and this involved merely the arm, but as the trunk was not screened it received a more or less diffuse exposure. Here also there followed a condition of prostration which verged on a moribund state, but from which recovery took place within a week. It should be noted that in both of these cases there was evidence of a general toxic condition, as shown by the slight rise of temperature, nausea and vomiting, loss of appetite and moderate prostration. The chief point in the metabolism of these two patients is the remarkable diminution in the excretion which followed the exposure, this being followed by an

(1) Am. Jour. Med. Sci., March, 1907.

equally striking rise in the excretion to a point much beyond that which it had previously been. This drop was not due to a reduction in the food, for in one instance it occurred before any reduction in the food had taken place, and in the second there was no marked reduction in the intake. It is probable that the intoxication is due to the fact that the organism is overwhelmed by the necessity for carrying on the complete disintegration of a mass of katabolic products and, as the body reacts, the complete disintegration is accomplished and the products are excreted. The fact that the patients were already the subjects of toxemia helps to explain the occurrence of the condition under circumstances which would not normally have been present. It also offers an explanation of the fact that a toxic reaction occurs only occasionally, and serves as an indication of when to beware of employing the *x*-rays as a remedial measure; for, when a certain degree of general intoxication is already present, the additional demands on metabolic activity produced by the rays may serve to turn the balance in an unfavorable direction. The degree of urinary acidity should be determined, as decreased elimination or increased production, which are produced by *x*-ray untoward effects, would cause states of the type described.

Roentgen Ray in Rhinoscleroma. M. J. Ballin[1] reports a 15-year-old rhinoscleroma in a 33-year-old Russian woman. When first seen the organ looked like one globular mass, the skin was red and tense; the lower part was covered with large ulcerations with a watery secretion. The entire mass was stony to the touch and seemed fixed. The patient received *x*-ray treatment thrice weekly for five months and is now apparently well.

Measles During Roentgen Ray Treatment of Ringworm In two cases of ringworm of the scalp treated by Macleod[2] with the *x*-ray, the patients developed measles. The eruption appeared on the area rendered bald by the *x*-ray treatment.

Multiple Carcinomata After Roentgen Ray Dermatitis. Nothing can be done, according to C. A. Porter and C. J.

(1) New York Med. Jour., March 16, 1907.
(2) British Med. Jour., June 1, 1907.

White,[1] for the dermic atrophy and the telangiectases in this condition. Hypertrophic changes, keratoses and warts, may be treated in the usual manner. If such treatment fails, excision with or without skin grafting will probably relieve the pain and may cure. Excision and grafting are best treatment for recurrent fissures. All ulcerations, which, under ordinary treatment, remain open, after three months, should be thoroughly excised, and very carefully examined. Subsequent treatment, to be determined by the microscopic examination, should be skin grafting, further excision and grafting, or amputation. Almost all cases of severe chronic dermatitis date back to early exposure. Roentgen ray ulcerations, in order that subsequent malignant degeneration may be prevented, should be excised early.

The Roentgen Ray in Acne. R. H. Boggs[2] states that the local treatment of acne consists in the removal of comedones, infiltrates and abscesses. Jacobi states the Roentgen rays remove the comedones and usually this takes place during the first few treatments; it is most likely due to the first or stimulating actions of the rays. Following this, there is marked desquamation, and, thirdly, a decrease in the size of the sebaceous gland.

The first two effects of the rays can usually be accomplished by medication and will generally cure the mild cases, but medication has little or no effect in decreasing the over-active sebaceous glands. In pustular acne, the rays seem to have a fourth action on the staphylococci by rendering the soil inert.

In treating cosmetic lesions like acne, the greatest caution must be used to prevent any undesirable results. It is absolutely necessary to study the quantity and quality of the rays. In selecting an acne tube, one is taken which maintains a uniform vacuum and which can be kept low. A new tube is never used unless the rays are passed through an aluminum filter. He employs a tube very low in vacuum, one which will scarcely show the bones in the hand, and with the anode placed at eight inches from the skin and with one and a half milliamperes of current passing he gives from five to ten minutes' exposure, depending on

(1) Jour. Am. Med. Assoc., June 15, 1907.
(2) Jour. Am. Med. Assoc., Aug. 31, 1907.

the condition of the patient, until nine treatments are given. By this time he is usually able to determine the amount of radiation necessary to cure the patient. As it is for the cosmetic results that these patients are treated, and as it is necessary to vary the quantity of radiation necessary to produce the best and most uniform results, three weeks of trial treatment seems advisable. By this method of varying the amount of radiation results should be uniform and all danger of an excessive dermatitis avoided. There is no skin lesion in which a more exact amount of rays is necessary to produce uniform results. It might be compared to radiography, where every one realizes that unless the proper exposure is made no picture is produced. The amount of radiation varies with the individual case and may vary as much as in taking a picture of a hand and a shoulder.

Roentgen Rays in Leprosy. G. Lassar[1] reports that 9 lepers were given *x*-ray. The results were not encouraging except in the early phases, when the lesions were few and isolated. The benefits obtained in cases of this kind justify continuance of the treatment. Two or three exposures a week were made, each from 10 to 15 minutes in duration, and with the tube about 10 cm. from the skin. Inflammation and gangrene followed exposures in some advanced cases. The local reaction to the exposures was similar to that observed with chemical applications.

(1) Derm. Zeit., May, 1907.

CHAPTER V.

GONORRHEA AND CHANCROID.

Puerperal Gonorrhea. In seventeen cases of this affection studied by Ellice Macdonald,[1] 12 had rises of temperature to about 100° F., and when the cases of mixed infection were eliminated 9 of 14 cases in which the gonococcus was found in the lochia had such rises of temperature. To consider these 9 cases first, the fever was mild in 3, moderately severe in 4 and in 2 was severe; in 5 the onset of fever was distributed over the first week, and in 1 it was as late as the thirteenth day. The average duration of the fever was four and one-tenth days, varying from 3 cases in which the fever lasted one day to 2 cases in which it lasted 9 days. The fever was in all cases very irregular and followed no definite curve. In 1 case the infection was very severe, but in the majority of cases this was not so, and temperature curves corresponding to the so-called "sapremic," or septic absorption, temperature was more frequently found, the temperature suddenly rising and returning to normal in 3 or 4 days. One of gonococcus and colon infection had fever on the sixth day, which lasted 6 days and reached 102° F. three times. Two cases of streptococcus and gonococcus infection also varied. One had a mild course and the other a most severe infection, resulting in death.

These cases show that the gonococcus may be a cause of puerperal infection and may cause severe constitutional disturbance. These findings have been corroborated by Mayer in a study of 6 cases of such infection and by an investigation of Little into the bacteriology of the recently pregnant uterus. Little found the gonococcus in the lochia in 16 cases. There were 10 cases with a temperature above 100° F.

From this it may be seen that gonococcus infection in the puerperium must not be disregarded. The first course of the infection is not usually acute, but the late manifes-

(1) Albany Med. Annals, November, 1907.

tations are usually more dangerous and severe. The influence of labor on a pre-existent gonococcus infection is most marked. The softened tissues and large raw surfaces of the puerperal uterus offer a splendid culture ground for the organism. It usually extends by mucous membrane, but may penetrate the softened uterine muscle. Extension to the Fallopian tubes is the common result and late disturbances are the rule. Two cases of the 17 came to operation for purulent salpingitis. The gravity of this infection exists not so much in its prime infection and immediate constitutional disturbances as in the more remote result of tubal and pelvic disease some time after the puerperium. Streptococcus infection results in slight anatomic alterations of the pelvic organs after recovery from the infection, but the reverse is true of the gonococcus infection where marked alteration of tissue is the rule and spontaneous recovery from pelvic disease from this cause is the exception.

Gonorrheal Ulceromembranous Stomatitis. The claim of Menard[1] that gonorrheal ulceromembranous stomatitis is always secondary to profound systemic infection is opposed by cases cited by J. P. Tuttle[1] and C. W. Cutler.[1] S. M. Hyman[2] reports the case of an 18-year-old girl who admitted practicing buccal intercourse. She first complained of terrible pain and burning in the cheeks and mouth. She avoided meals fearing the intense pain caused by swallowing either liquid or solid food, especially the latter, which would cause bleeding. The mouth felt parched, even though there was increased, foul smelling, expectoration, which contained traces of blood. The tongue was swollen and painful. No incubation period could be established; her symptoms commenced with dryness of the mouth, followed by all the others within twenty-four hours. Constant nausea was also present. The uvula, soft palate, and cheeks were covered with a milky white membrane, showing bleeding spots here and there within it. This membrane was nonadherent, and on removal showed beneath a red inflamed surface resembling the scarlatinal blush. The tongue was red and swollen, the patient being unable to protrude it completely. The gums were spongy,

(1) Practical Medicine Series, X, 1904.
(2) New York Med. Jour., Jan. 25, 1907.

markedly retracted from the teeth, and bled freely on handling. The buccal temperature was 99.7° F.; the axillary temperature was only 98.2° F. The pulse and respiration were normal. Genital gonorrhea was not present.

The pseudomembrane consisted of mucus, epithelial and pus cells, within and around which were groups of staphylococci and diplococci, the latter having all the characteristics of the gonococcus of Neisser.

Calomel in 10 grain doses was ordered at bed time; applications of silver nitrate were made locally, commencing with a solution of 1 to 250 and increasing to 1 to 50 daily, with gradual amelioration of symptoms from the start and total disappearance of exudation on the fifth day. From the fifth to the tenth day gargles of boric acid, saturated solution, and alum 1 to 100 were used, after which time patient was discharged cured.

Gonorrhea and Prostate Enlargement. B. Goldberg[1] has found, but rarely, conditions suggesting enlargement of the prostate in patients with prostatitis. Evidence of prostatitis was present in twenty out of fifty cases of unmistakable enlargement of the prostate. Unhealed gonorrhea is an important etiologic factor in some cases. There was history of venereal infection in 25 per cent of fifty patients with enlargement. In a few cases of prostatitis in young men the prostate was altered as in prostatic enlargement, but free from the objective disturbances of enlargement. Neurasthenia and nosophobia predominated. In another small group were symptoms of actual enlargement, retention of urine, residual urine, secondary infection of the urinary passages, etc. The prostate was small in some and moderately enlarged in others. He styles this group chronic cysto-paretic prostatitis. Many cases of what is called "soft enlargement of the prostate" belong to this group; the patients were older men. The importance of distinguishing between mere prostatitis and enlargement is clear. In five cases he was able to express secretion from the prostate which demonstrated primary prostatitis in men who had never had gonorrhea nor had ever used the catheter.

Gonorrheal Vertebral Rheumatism. Bouchard[2] claims

(1) Centralbl. f. Chir., No. 7, 1907.
(2) Zeit. f. klin. Med., lxii, 1907.

that this disease attacks either the lumbar, dorsal or cervical segment alone. The symptoms are limitation of movement, at times going on to ankylosis, deformity of the spine, and sometimes the formation of osteophytes. Such cases are often gonorrheal in origin, and may develop years after an acute attack when there is nothing but some old chronic inflammation in the prostate or vesiculæ seminales.

Gonorrheal Joint Disease. P. W. Nathan[1] states that with the exception of the mild evanescent cases due to toxemia, this is really a pyemic condition. The gonococcus directly invades the affected tissues and the foci are located either in the synovial membranes (arthritis), or they are in the articular ends of the bones (osteoarthritis). In osteoarthritis the bone focus is always primary and is never caused by extension of the inflammation from the interior of the joint. Hence a gonorrheal arthritis remains an arthritis and never involves the bones, no matter how long it exists or what its intensity. Gonorrheal joint disease may be recurrent but never chronic. The cases which have been called chronic are those in which the initial acute inflammation has left behind bands of adhesion or other structural change in the synovial membrane in arthritis, and bony outgrowths or ankylosis in osteoarthritis. These changes, unless treated mechanically or by operation, are permanent. Treatment during the acute stage must be on general lines, and must depend on existing conditions.

Gonorrhea in Women. This subject is discussed by W. S. Stone,[2] who claims that the urethra in women rarely escapes infection, and that its entire length is usually involved, but the disease is milder and of shorter duration than in the male. Gonorrheal cystitis rarely occurs. The symptoms usually referred to it are due to urethritis. Stricture of the urethra has been seen only once in twelve years' experience in a large clinic. Treatment should be: Water internally, instructions as to dirt and contagion, and hot applications to the genitals. Injections should not be used in the acute form of the disease. Gonorrheal vaginitis is rare except in young girls and elderly women. The latter with a gonorrheal endometritis of long standing may

(1) New York Med. Jour., March 16, 1907.
(2) Med. Record, April 27, 1907.

show a profuse purulent discharge from the urethra with it. The ducts of Bartholin's glands are the portion that is affected, and not the glands themselves, from stagnation of discharges about the genitals. Examination for pus in these glands and the urethra will give valuable aid in the diagnosis of gonorrhea.

Balneology in Joint and Late Gonorrheal Lesions. This treatment is urged by J. Siebelt,[1] who recommends very hot mud baths with massage. Some cases resist treatment, but, as a rule, benefit is promptly realized. There may be a gonorrheal basis for some of the joint affections commonly ascribed to rheumatism. Good results were obtained in gonorrheal catarrhal affections of the female genitals by pine-bark baths, with prolonged irrigation kept up during the bath, exerting a mild massage of the parts. The pine-bark baths are prepared fresh each time, as the chemical constituents are changed by keeping.

Effects of Maternal Gonorrhea on Offspring. Labenstine and Harrar[2] compared fifty babies of gonorrheal mothers, one hundred and fifty babies of normal mothers, and fifty babies of non-gonorrheal mothers who presented more or less marked elevations of temperature. The babies in this series of cases were all breast-fed and the period of observation extended over the first ten days of infant life. The gonococcus was demonstrated in the genital tract of each of the mothers alleged to be suffering from gonorrhea.

The average birth-weight of the babies of gonorrheal mothers was found to be 297 grams (10½ oz.) less than those of normal mothers and the average initial loss in weight was also more pronounced in the former than in the latter. Another important fact was that the amount of the loss which was regained by the tenth day was much less in the gonorrheal than in the normal babies. The former also suffered more from fever and intestinal disturbances than the latter. Gonorrhea in the mother is a frequent cause of premature births. In this series of cases it amounted to about twenty-two per cent, whereas under normal conditions it occurs only in somewhat over

(1) Berlin. klin. Woch., No. 15, 1907.
(2) Bull. Lying-in-Hospital, December, 1900.

two per cent. Fever in the mother, no matter what its cause, always exerts an unfortunate effect on the child. The loss in weight which the latter experiences, is always very slowly regained.

Gonorrheal Conjunctivitis. M. E. Hart[1] states that in this disease there is a period of incubation, varying from a few hours to three days, according to virulence. The lids become reddened, hot and more or less swollen with edema—sometimes to such an extent that eversion is difficult and a view of the cornea almost impossible. The conjunctiva of the lid, from a cellular infiltration, is intensely injected, thickened and rough. This feature differentiates it from a benign conjunctivitis, as in the latter the conjunctiva is yielding and has a smooth surface. The conjunctiva of the eye ball is swollen or, as it is called, chemotic, but this chemosis ends abruptly at the limbus and gives the appearance of a crater with the cornea, deeply situated, as its base. The secretion at first is sero-sanguinous and is likened to meat juice—flakes of pus float about on its surface. The eye is sensitive and painful and the patient may have a slight rise in temperature. In this state of infiltration the eye remains in this condition from one to three days. Rapidly following comes purulent secretion. Simultaneously with the recession of the swelling of the lids and conjunctiva, there begins a very profuse secretion of pus from the palpebral fissure. At the end of from four to six weeks the eye regains its normal state, except for the condition of a chronic conjunctivitis lasting many months, which finally subsides with slight permanent cicatrices of the conjunctiva. Some infections are very light and, on the other hand, some are of extreme severity. In the former, all of the inflammatory symptoms are less, the changes being limited chiefly to the conjunctiva of the lids.

Gonorrheal Epididymitis. This occurred in 16 per cent. of the gonorrhea cases observed by A. A. Uhle and W. M. Mackinney,[2] of 241 patients; 123 had a right sided epididymitis, 118 a left sided and in 23 both sides were involved. In double epididymitis, one side was usually

(1) California Jour. of Med., July, 1907.
(2) New York Med. Jour., Feb. 23, 1907.

involved some time before the other; in three patients both sides were involved on the same day. A previous attack of gonorrheal epididymitis predisposes to subsequent attacks. Nineteen of the cases were recurrences, eleven recurring on the same side. In the patients who previously had a double epididymitis, a recurrence was noted on both sides in six, and on one side in two. It occurred most frequently in the second and third week of a gonorrhea. It may occur in the first week, through agencies which provoke the early onset of a posterior urethritis. It may follow years after infection. In 42 cases it occurred in the first week; in 37 cases in the second week; in 44, in the third; in 19, in the fourth; in 23, in the fifth; in 14, in the sixth; in 12, in the seventh; in 10, in the eighth, and in 63 after the eighth week. Suppuration rarely occurs. At times one or more small pus pockets are formed in the tail of the epididymis. In these, resorption follows the subsidence of the acute symptoms, the cavity is filled with connective tissue, which remains for years as a small nodule. By contraction of the connective tissue many of the canals are obliterated, resulting in a cystic dilatation of the part cut off, due to a stasis of spermatozoa, and the fatty degeneration of leucocytes and epithelial cells. Contrary to the statement found in many text-books, the testicle is only exceptionally involved. Of the 183 cases ten developed after drink, three after intercourse, eleven after drink and intercourse, three after athletic exercises and ten after instrumentation. In one case epididymitis followed the mumps, the patient also having gonorrhea, and in a second it developed immediately following an operation for appendicitis. Of the patients 3.6 per cent. had ardor urinæ; 24.7 per cent., priapism; 16.8 per cent., chordee; 40.0 per cent., urinary frequency; 34.7 per cent., imperative urination; 0.2 per cent., terminal hematuria.

A two glass test of the urine showed 189 with both cloudy, 24 with first cloudy and second clear, and ten with both urines perfectly clear.

Silver Iodid in Gonorrhea. This drug is advised by G. P. LaRoque.[1] After bacteriologic diagnosis the patient

(1) Therap. Gaz., Nov. 15, 1906.

is given a urethro-bladder irrigation through the acorn Martin nozzle, with the irrigation bag well elevated, using either plain, hot sterile water or a 1 to 10,000 solution of potassium permanganate. This is to cleanse the urethra, and after this, by means of an ordinary glass urethral syringe, the whole canal is filled with a 10 per cent. suspension of silver iodid in quince seed mucilage. This generally requires three syringefuls, and is done at the first visit to teach the patient how, and to impress on him the necessity of completely filling the urethra. He is then given a prescription for the 10 per cent. suspension of silver iodide and directions, slightly variable, depending on whether the case is acute or chronic. In every case he is instructed to drink large quantities of water between meals, and to secure at least one bowel evacuation every day, even if he must take a laxative. The urethra must be completely filled with the injection through a blunt nozzle syringe at least three, and, if convenient, four times daily, each time after urination. To completely fill the canal at least three syringefuls of the preparation are needed, between each injection the meatus being held closed. The fluid is retained in the urethra for two or three minutes. He is instructed to return twice weekly for total bladder irrigation as at the first visit.

In acute and irritable cases with violent arder urinæ, painful erections, etc., irritating articles of food and alcohol are interdicted and a scrotal suspensory is ordered. For these patients a tablet of lithium carbonate is also ordered to be taken in a full glass of water four times daily, between meals. This is chiefly to make the patient drink plenty of water, but the drug does diminish the acidity of the urine. Occasionally a mixture containing 15 or 20 grains of sodium bromid and 5 minims of tincture of belladonna to the dose, is taken three or four times daily, and especially at bedtime, to prevent painful erections and diminish ardor urinæ. To prevent paraphimosis, the patient is cautioned against leaving the prepuce retracted back of the glans, and if edema exist the penis should be kept in an elevated position either by means of the shirt, or in rare cases by a strip of adhesive plaster passing beneath the organ and attached to either side of

the abdomen. In all cases local cleanliness is urged, to prevent accumulation of smegma and balanoposthitis.

Chancroid. According to A. A. Uhle[1] chancroid may be divided into classes according to the amount of tissue destruction and to the clinical appearance and course of the ulcer. The gangrenous, phagedenic, diphtheritic and serpiginous varieties are recognized. Constitutional diseases, poor hygienic surroundings, lack of cleanliness, excesses and careless treatment are usually regarded as being responsible for the virulency of the infection. While these factors may act as indirect causes the real virulency is dependent upon a mixed infection. In the gangrenous chancroid the base of the ulcer becomes gray or black, the ulcer spreads rapidly and penetrates deeply, the tissue becomes necrotic and large areas are destroyed, the surrounding tissue appears dark red, is infiltrated and painful, hemorrhage may be profuse and great and serious defects remain after the ulcer has healed.

In the phagedenic variety the ulcerative process remains more localized, the necrotic areas being much more limited than in the gangrenous form. The base of the ulcer is covered with a gray slough, and the neighboring tissue infiltrated and inflamed. It is frequently seen in cases complicated with phimosis and at times in paraphimosis. In phimosis the ulcer is usually found on the inner surface of the reflected layer or on the glans penis. The ulcer may perforate the prepuce, the glans being exposed through the opening. In paraphimosis the ulcer is generally found on the constriction, this being the point of election owing to the circulatory disturbances. When the ulcer is located on the shaft of the penis it may eat through the spongy body with a resulting urinary fistula. In some cases the ulceration penetrates into the cavernous body, followed by considerable hemorrhage.

The serpiginous and diphtheritic varieties are very rarely encountered. The diphtheritic form is a superficial ulcer covered with an adherent dry, brown or gray membrane, spreading on the surface but not penetrating to the deeper tissues. In the serpiginous variety the process of ulceration and extension is slow and without local reaction.

(1) N. Y. Med. Jour., July 20, 1907.

It spreads slowly in a serpiginous manner, one part healing as another part is involved. It is very chronic and may last for months.

Chancroid Treatment. This, according to A. A. Uhle and MacKinney,[1] should consist in improvement of the general health as well as in local treatment. In the more virulent forms, its spread should be checked by cautery, curette or nitric acid under general narcosis and the resultant wound treated antiseptically. Sometimes a continuous bath is needed. Excision is inadvisable, as a greater infected surface is apt to result. If phimosis be present lateral or dorsal splits should be made. Paraphimosis should be reduced if practicable and the constricting band severed if absolutely necesary.

Gonorrheal Pyelitis. According to Sellei and Unterberg,[2] it is difficult to determine whether pyelitis is produced by the gonococcus alone. There is always a possible source of error through the contamination that is likely to occur during the passage of the instrument through the urethra and bladder. The gonococcus alone is sufficient to produce pyelitis, although in most cases mixed infections are present. The process is the result of direct ascension and not of hematogenous transmission. The affection is usually unilateral and the symptomatology is not characteristic, so that the diagnosis can be made with certainty only with the ureteral catheter. The temperature is considerably elevated only during the most acute stages; later on there are only slight intermittent elevations. In some cases fever and pain are entirely absent. The polyuria and pyuria appear to be constant, however, but these symptoms are also common to other forms of pyelitis. In most cases the process may be cured by rest and internal medication. Where these measures are ineffectual, lavage of the renal pelvis is indicated. For this purpose boracic acid solution and 1 per cent. silver nitrate solution may be used.

Gonorrheal Peritonitis in Men. This condition is reported by J. W. Thompson.[3] In both instances the in-

(1) New York Med. Jour., Feb. 23, 1907.
(2) Berlin. klin. Woch., Sept. 5, 1907.
(3) Northwest Med., March, 1907.

fection in Thompson's judgment came from the seminal vesicles.

Gonorrheal Cell Morphology. J. Neuberger[1] says the mononuclear leucocytes are exceptionally active as phagocytes under these conditions, incorporating especially the multinuclear leucocytes which assumed a spherical shape. Gonococci were frequently found in them also.

Gleet. According to C. G. Foote[2] this is the presence of a discharge of a chronic nature at the urinary meatus, most often noticed on getting up in the morning. These patients often become neurasthenics. In a considerable number of cases the disturbance is psychic and the slight discharge which can be detected is the result of persistent efforts at "milking" the urethra. In some instances the patient cannot detect the secretion save by squeezing the urethra. Some patients would really experience disappointment if the morning "tear" of urethral secretion should chance to be absent. The vigor and pertinacity with which they "milk" the urethra to obtain the melancholy satisfaction of exhibiting a drop or two of mucus, in evidence of their alleged deplorable condition, is worthy of a better cause. In the large percentage of cases, however, the discharge is due to some definite pathologic lesion.

Chronic urethritis is probably the most frequent condition with which we have to deal. But in order to be still more exact it will be necessary for us to determine further whether gonococci are still present in the discharge, whether the inflammation is located in the anterior or posterior urethra, or whether we have to do with a general diffuse catarrh or localized hyperemic or granular patches, circumscribed infiltrations, organic stricture or folliculitis. To find out whether there be an anterior or a posterior urethritis the patient should be instructed to pass his urine in two glasses. If the first glass is cloudy and the second clear it signifies that the inflammation is in front of the triangular ligament. If the second glass is also cloudy it shows inflammation of the deep urethra. In this latter class of cases we will often have frequent and painful urination to indicate the location of the trouble. Another test for ascertaining whether the inflammation is located

(1) Virchow's Archiv., lxxxvii.
(2) Cleveland Med. Jour., June, 1907.

in the anterior or deep urethra is to let the patient pass part of the urine in the bladder, after which the surgeon makes firm pressure from above downward over the prostatic urethra with the finger in the rectum. The patient passes the remainder of the urine in the bladder, and if there is posterior urethritis there will be considerably more shreds and pus than are present in the first glass. In the cases of anterior urethritis injections of the mineral or vegetable astringents, or argyrol or protargol, if gonococci are present, will often produce a cure. If the trouble is in the deep urethra these injections will be of absolutely no benefit, and we must resort to intravesical irrigations of potassium permanganate or the organic silver preparations, or instillations, with an Ultzmann syringe, of silver nitrate one-half to 2 per cent., or even higher; argyrol, 20 per cent., or thallein sulphate, 10 or 15 per cent. If the discharge be due to hyperemic or granular patches, which can be determined with the endoscope, the only intelligent way to treat them is by direct applications of strong solutions of silver nitrate, 15 to 60 grains to the ounce, or copper sulphate, 40 to 60 grains to the ounce, or by the passage of a full-sized sound, which will break up the granulations and promote repair. The presence of superficial or deep infiltrations can sometimes be felt externally when located in the pendulous urethra, and they can usually be definitely located with the endoscope or the olive-tipped bougie. The presence of shreds in the urine is very suggestive. Large majority of cases of gleet are due to these infiltrations. They are often, if left untreated, the starting point of organic stricture, and are best treated by gradual dilation every 4 or 5 days either with a sound or dilator. The dilatation should be continued according to the amount of reaction which follows until a 32 or 35 French is reached, or even higher in some cases. The cutting or dilatation of a stricture is usually sufficient to cure a gleety discharge. In folliculitis, which can be detected by the endoscope, dilatation often cures by mechanically emptying the glands and follicles of the urethra, or cauterization through the endoscope may be required.

Chronic prostatitis and seminal vesiculitis is frequently overlooked. Frequent or painful urination with deep perineal tenderness and prostatorrhea or spermatorrhea

with mental depression point to involvement of the prostate or vesicles, and by rectal examination there is found either some enlargement of the prostate with areas of softening and tenderness on pressure and pus cells present in the discharge obtained by expression of the prostate, or, in the case of the seminal vesicles, a sausage-shaped induration extending up on either side of the bladder, with tenderness, hemospermia and symptoms of bladder irritation. Treatment of chronic prostatitis with massage, hot rectal enemata, intravesical irrigations or instillations into the prostatic urethra usually results in a cure. Similar treatment directed to the seminal vesicles is also productive of good results. Tumors foreign bodies and calculi. There are rarely malignant growths of the urethra, but the most frequent form of tumor is the papilloma. These can be diagnosed by the endoscope, and can be removed by the snare or the galvano-cautery; in tumors of the deep urethra perineal section may be necessary. Foreign bodies of all sorts and descriptions are occasionally found, usually introduced through sexual perversion, or accidentally, as by the breaking of a catheter. Their presence can be determined by the endoscope, and they can be removed in this way with special urethral forceps, or by perineal section, which latter procedure is the best in most cases. Calculi can be diagnosed and treated in the same way.

The vigorous erection usually present in the morning in young healthy men, due to a full bladder, is usually accompanied by some moistening of the meatus or the presence of a few drops of mucus. This may or may not cause serious concern to the individual, but if he has had some urethral disease or sexual abnormality it may assume great importance in his eyes. If we can exclude any pathologic condition we can assure the patient that his trouble is purely imaginary, or, if necessary, instruct him to drink considerable water before retiring and to jump out of bed and urinate immediately upon awaking before he has a chance to look for any discharge.

Sexual overstimulation, perversions, coitus interruptus, excessive masturbation, or sexual excitement without gratification, may cause a chronic discharge, or perpetuate and aggravate any pathologic condition already present. This usually shows itself by a drop or more of this mucus in

the morning. These habits persisted in eventually cause chronic urethritis, prostatitis or vesiculitis.

Constitutional conditions may determine the affection in some instances. These causes may be particularly active in individuals who have been the subjects of previous prostatic or urethral disease. There are people, usually anemic or poorly nourished, who have a tendency to catarrhal inflammations of all the mucous membranes. In such individuals a gonorrhea may persist in spite of all local treatment, and a cure will result only after the administration of tonics, the most valuable of which is iron, or after several months of recreation. Gouty or rheumatic subjects are unusually prone to recurrence of the discharge on slight provocation. Phosphaturia, oxaluria and hyperacidity of the urine may occasionally be the cause of a morning drop, and individuals who are high livers and heavy drinkers and who are accustomed to eat and drink much late at night will often present a discharge in the morning.

CHAPTER VI.

SYPHILIS.

Spirocheta Pallida. The syphilo-pathogenic relations of the *Spirocheta* (*treponema*) *pallida* and its morphologic status still remain *sub judice*. The omnisciently infallible attitude adopted by Schaudinn scarcely helps to clear up the matter. He claims a special instinct in detection of the pale spirochete. Such a claim is charlatanish and has long been denounced by scientists. Control experiments, the test for truth, are incompatible with it. The spirochete is, however, used in diagnosis to a degree unwarranted by scientific rules.

Early Anti-Spirochete Treatment. This subject is discussed by Thalmann,[1] who claims that spirochetes in the primary lesion die under the influence of mercury. The endotoxins liberated produce a specific antibody. The immunity acquired gradually subsides. The few spirochetes still left alive commence to proliferate once more as the antibodies cease or lose their efficacy. This happens again and again, producing recurrence of the syphilitic manifestations. The endotoxins liberated by the spirochetes are very injurious to certain cells. Individuals react differently as to production of antibodies. Complete absence of this production may be the reason for the malignant course of syphilis in some cases. The fetal organism is unable to produce the antibodies and the placenta does not allow their passage from the mother; this, he claims, accounts for the serious effects of congenital syphilis. The endotoxins liberated by destruction of spirochetes in the fetus may pass to the mother and induce active immunity in her, thus explaining Colles' law. Rational treatment of syphilis consists in destroying the spirochetes when they first invade the body, before they have had a chance to proliferate, but are still congregated mostly at the primary lesion. Prompt mercurial treatment kills them off

(1) Münch. med. Woch., liv. 1907, No. 13.

and the endotoxins liberated are small in amount, compared with those liberated when the organism is swarming with spirochetes. This first course of mercurial treatment should be followed by another course when close supervision shows that the spirochetes are commencing to proliferate again. In patients treated on this principle more than 30 per cent. showed no general symptoms during the six months and more which had elapsed. In the others the secondary phenomena were restricted to a single focus or a few mild foci, none appearing on the genitalia. At the first discovery of spirochetes in the primary lesion Thalman begins mercurial treatment with inunctions supplemented by local injections of 0.5 c. c. of a 1 per cent. solution of corrosive sublimate directly into the primary lesion, with or without application of a mercurial salve to the nose. Generally no further manifestations of syphilis develop or they follow much sooner than usual, within from six to twelve weeks. They are then much less pronounced and fewer in number than usual. The metastatic affection was in the tonsil in the majority of cases, and on the back, big toe or in the mouth in the others.

Appearance of the secondary lesion is the indication for mercurial treatment to kill off spirochetes before they proliferate. Treatment should be general and local and results are always better when treatment is instituted early; its effect is enhanced by the traces of immunity still persisting. Secondary manifestations then spare the points previously treated with mercury, and do not develop on the genitals. One patient with recent syphilis and recurring secondary lesions in his mouth at different times during the course of a year did not infect his wife. She bore him a healthy child at the end of the year, only twelve months after his primal infection. Child and mother are both healthy to date. Potassium iodid is given with the mercury to aid absorption and elimination, but it is not used during the last week of the course of mercury, as the latter should be retained instead of rapidly eliminated.

Spirochete Motility. The pale spirochete, according to A. Blaschko,[1] has the power of active movement and can be transported by the lymph stream as well as by the blood

(1) Berlin. klin. Woch., No. 11, 1907.

PLATE VII.

Glossitis Mercurialis.

Patient received at the Cincinnati Hospital July 24, 1907, and photographed two days after her admission, after the tongue had been reduced fully one-third by cold, moist, astringent applications. The patient without presenting any evidence of syphilis had been prescribed for by a Cincinnati druggist and had been taking protoiodid of mercury for six or eight months continually until the tongue protruded from the mouth to the extent shown by the illustration. She could neither extend nor retract the member, which was greatly congested, cyanotic and free from all tremor, the fraction of an inch. Saliva poured from the mouth in excessive quantities; the taking of food or drink was rendered almost impossible for a few days and her physical discomfort was extreme. The case is a striking example of the danger of illegitimate and unintelligent prescribing at the hands of druggists. Case of Dr. M. L. Heidingsfeld, Cincinnati.

stream. In a primary syphilitic lesion they are generally congregated at one spot.

Gumma mimicry by Spirochete. C. Benda[1] reports a case in which formations resembling giant cells in miliary gummatous nodules in the liver of children with inherited syphilis were found to be merely aggregations of pale spirochetes walled in and finally killed by an encroaching wall of leucocytes.

Syphilis Prophylaxis. Maisonneuve[2] recently, after submitting to a careful personal examination to definitely preclude syphilis, allowed himself to be inoculated in the sulcus coronarius on each side with the virus of two initial lesions from two well-defined cases of primary syphilis in presence of Metchnikoff and four other physicians. The skin was scarified and the virus thoroughly rubbed into the abraded surface. One hour after the inoculation the parts were treated with a 10 per cent. calomel-lanolin ointment. Apes which were inoculated with the same secretion showed typical lesions of syphilis; others, likewise inoculated, but also treated with calomel ointment, remained free from syphilis. Maisonneuve submitted himself to careful examinations for three months, without showing the slightest evidence of syphilis, and the wounds promptly healed within seven days.

This experiment does not take into account the syphilis mimicing error shown in the old inoculation experiment of Auzias-Turenne. It is, therefore, hardly astonishing to learn that Gaucher[3] reports a case of syphilitic infection in an individual who had been applying 10 per cent. calomel salve locally as a prophylactic measure.

R. W. Taylor[4] reports four cases of initial lesions where *Spirochetæ pallida* were found, but which were not attended by constitutional symptoms. He claims for these cases and others reported that the question: Does syphilis in some very exceptional cases spontaneously abort in the primary stage? should be answered in the affirmative.

Syphilis in the Army. Syphilis, according to E. Delorme,[5] is less prevalent in the army than among civilians,

(1) Berlin. klin. Woch., No. 16, 1907.
(2) Lancet-Clinic, Feb. 9, 1907.
(3) Annal. des Mal. Ven., October, 1906.
(4) Am. Jour. of Surg., November, 1906.
(5) Bull. de l'Académie de Méd., lxxi, No. 17, 1907.

since the soldier learns through instruction to avoid syphilis earlier than does the civilian.

Luetic Febrile Visceral Disorders. These are discussed by H. Raubitschek,[1] who shows the need of examination as to lues when persistent hectic fever of unknown origin occurs. Lues of the liver, lungs and other organs may run its course with only slight or vague symptoms. An acute febrile lung tuberculosis may lead to a fatal termination in a syphilitic without the lues being directly responsible for it. In some cases reported exploratory incision revealed a gummatous affection of the liver or other organ, and all symptoms subsided under mercurial treatment. The syphilitic affection may mimic acute articular rheumatism. In one case a man of 30 had suffered for months from fever with a slight chill every evening, followed by sweating. Long-continued quinin treatment gave no relief, but mercurial injections had marked effect. Liver and spleen returned to normal size, fever vanished. The patient has remained in good health.

Syphilis Insontium. Innocently acquired syphilis of the lips and tonsils is reported by A. B. Thrasher[2] in four cases. In two cases the tonsils were affected and in two the lips. Cunnilinctus is frequently responsible for tonsil chancre. This could be excluded in Thrasher's cases.

Hereditary Syphlis in School Children. This subject has been discussed by G. DeS. Saxe,[3] who in 2,500 school children found but 12 with congenital syphilis. The children examined ranged from six to sixteen years, and about equal numbers of boys and girls were studied. The heredosyphilitic children ranged from six to fourteen years of age. Five were boys, and seven girls. All save one were deficient mentally; eight children showed Hutchinson's teeth, four showed the remains of syphilitic eye lesions, and one showed an active keratitis. Three of the twelve individuals had hydrocephalic heads. All showed retarded physical development, and seven of the total number showed associated rachitic changes in the bones. Nine showed scars about the mouth; all had enlarged glands;

(1) Central. f. d. Gren. d. Med. u. Chir., 17, 1907.
(2) Lancet-Clinic, March 23, 1907.
(3) Arch. of Pediat., December, 1906.

two had lesions of the nose and none in the throat. Chorea was present in two.

Congenital Syphilis. Hochsinger[1] divides this affection into four groups: In the *first group* belong all syphilitic fetuses which have perished *in utero,* usually before the eighth month. On examination these fetuses are found to be free from any skin eruption, though they show severe and diffuse disease of the glandular organs, particularly of the liver and spleen, and very frequently present evidence of syphilitic osteochondritis.

The *second group* includes those cases where the product of conception is born shortly before the expiration of pregnancy or it may be born at term. It may be born alive or dead. In either case it shows syphiloderma (papular or bullous syphilides). On necropsy will be found macroscopic and microscopic evidence of diffuse inflammatory processes in the visceral glandular organs, particularly in the liver, the kidneys and the lungs. Very often there is evidence of syphilitic osteochondritis at the epiphysis. These infants have a peculiar marantic appearance at birth which should arouse a suspicion of syphilitic infection. The skin is of a greenish-yellow color; the nose is broad and retracted. Snuffling, with difficult nasal breathing, occurs early. The voice is hoarse and in a short time there appears an irritating discharge from the nose. A purulent discharge may occur from the ears.

The *third group* comprises all those infants born with congenital syphilis, though without any syphilitic skin manifestation. Shortly after birth the syphilitic skin and bone manifestations may appear, though visceral changes are not recognizable.

The *fourth group* comprises those infants who are born alive and who present at birth or shortly thereafter visceral and osteochondritic manifestations, though they remain free from skin eruptions.

Primary Larynx Syphilis. According to J. M. Ball,[2] congenital and secondary syphilis of the larynx are rare. Tertiary lesions are usually met with in secondary syphilis of the larynx, appearing in from six months to two years after infection. A hyperemia comes on rather insidiously,

(1) Illinois Med. Jour., April, 1907.
(2) Illinois Med. Jour., April, 1907.

and usually without marked subjective symptoms. If the vocal cords be involved there is impairment of the voice. Mucous patches and superficial ulcers, while rare, do occur. The latter have sharply defined margins. The tertiary lesions, as a rule, do not appear until three or four years after the primary infection, and may be delayed up to fifteen or twenty years. In this stage "gummata, deep ulcerations and cicatrices, causing dyspnea and alteration of the voice, occur. The gummata may be in the form of multiple tumefactions or a diffuse infiltration. Small gummatous nodes may be absorbed, while large ones usually soften and break through into the larynx, giving rise to deep, flask-shaped ulcers with infiltrated edges, and covered with a dirty yellowish exudate. The ulceration and infiltration sometimes extend down to the laryngeal wall, causing perichondritis and necrosis of the cartilage." Following the ulceration dense fibrous bands of scar tissue are formed, which later contract, causing distortion of the larynx.

Of the symptoms of syphilis of the larynx, hoarseness is present early in the disease, which later may develop into complete aphonia. If the ulceration be limited to the epiglottis, the voice may be but little affected. Dyspnea in secondary syphilis is not very marked, but in the tertiary stage often becomes troublesome and may even threaten life from thickening of tissue, new growths or cicatricial contraction of parts. Dysphagia is not very prominent until later in the disease. Epiglottic thickening and ulceration seem to interfere but little with the act of swallowing. Pain, except on deglutition and on using the voice, is frequently absent. Cough, if present early, is caused by an effort to remove secretions. Later as the larynx becomes constricted, it may acquire a characteristic spasm. Severe cases may be accompanied by fever and debilitated patients often have colliquative sweats. Specific eruptions seem rather infrequent, and constitutional symptoms are slight, unless dyspnea and dysphagia are well marked. The appetite generally remains good. On making a laryngoscopic examination, the hyperemia, mucous patches or superficial ulcers of the secondary stage, previously described, will be observed. In the tertiary stage we have the presence of gummata, the characteristic deep circular

or flask-shaped ulcers or bands of cicatricial tissue. Enlargement of the cervical glands is also met with.

Concerning the differential diagnosis, the hyperemia of tuberculosis of the larynx is of a much paler red than that of syphilis. Tubercular ulcers usually are more numerous and more superficial, with an irregular border and attended with pain. The ulceration is more likely to begin in the lower larynx, while in syphilis the upper portion is often involved first, the order of frequency being the epiglottis, the vocal cords, the ventricular bands, and, lastly, the arytenoid commissure. Fever and grave constitutional symptoms, as a rule, are absent in syphilis. Tubercular laryngitis is frequently attended with pulmonary involvement. Incipient carcinoma in the early stages also may be difficult to distinguish from syphilis.

Symptom Treatment of Congenital Lues. This as recommended by I. A. Abt,[1] is as follows: For snuffles, calomel, 1 part, and sugar 20 parts, may be prepared as a snuff or insufflation. An ointment of the yellow oxid of mercury, 1 gr. to the dram, may be brushed into the nostrils; or the white precipitate ointment, 1 part, and lanolin or vaselin, 3 parts, may be brushed into the nose. For generalized eruption, bichlorid baths and plaster mull. In visceral involvement or tumors, any energetic forms of treatment as injections, inunctions, etc. Condylomata are washed with a 1 or 2 per cent. salt solution and then dusted with calomel. Fissures or rhagades about the mouth are treated with calomel powder, or if at all persistent they may be carefully touched up with a 10 per cent. chromic acid solution or with a 1 per cent. corrosive sublimate solution. In persistent or unyielding onychia, mercurial plaster wound about the finger gives favorable results. For anemia the various iron tonics may be employed. In mercurial enteritis, which sometimes occurs, the mercury should be stopped and the treatment should be directed toward the enteric condition, as is usually practiced in such cases. In tertiary symptoms, such as the severe headaches, the bone involvement and the visceral lesions, iodids should be employed, or, where the symptoms are urgent, a mixed treatment may be used; for such cases

(1) Illinois Med. Jour., April, 1907.

the iodids and mercury should be pushed. The influence of specific treatment becomes apparent in a few days. The eruption becomes paler and new skin lesions seem to be prevented. The rhagades and the patches on the mucous membrane seem to improve after four or five days' treatment. The pseudo-paralysis, due to the osteochondritis, improves rapidly. Most resistant against treatment is rhinitis. The discharge of secretion will continue for a long time, and even after this has ceased a peculiar noisy or snuffling respiration continues.

Palmitin in Mercury Injections. This treatment of syphilis is urged by F. J. Lambkin.[1] Palmitin is an ether glycerid of palmitic acid easily saponified in the circulation, being converted into glycerin and a soluble alkaline palmitate. The following is the injection cream advised by Lambkin: Mercury, 10 gm. (or calomel, 5 gm.), creosote and camphoric acid, each, 20 c.c., palmitin to 100 c.c. Each ten minims contain mercury, one grain or calomel half a grain.

Multiple Chancre of the Penis. F. C. Knowles[2] reports the case of a 28-year-old laborer who came under his care complaining of tumors on the penis. His past venereal history consisted of a bubo, which was opened, at twenty, and gonorrhea at twenty-four. On examination of the penis five distinct, separate swellings could be differentiated. Both chains of inguinal, the epitrochlear and the posterior cervical glands could be easily palpated. His hair had been falling for over a week, and it "hurt to swallow;" pains in the bones and muscles were present. The primary incubation period was about one month, the man having had frequent and promiscuous intercourse. On the glans on the right side, extending back to the corona, was a dime-sized indurated swelling. Two and a half inches from the aperture of the frenum on the right side of the shaft of the penis was another dime-sized indurated lesion. At the base of the shaft of the penis on the left side there was a third raised, buttonlike, indurated lesion of the same size as the two preceding. Two other similar indurated lesions were present on the anterior surface of

(1) Lancet, Nov. 3, 1906.
(2) New York Med. Jour., Dec. 8, 1906.

the penis, on a line one-half inch behind the corona glandis and almost in the median line. Paraphimosis was present at the site of these last two lesions. All of these lesions were densely indurated and could be lifted up between the fingers. They had been cauterized, a few days after their appearance, by the physician first in attendance; but as the induration increased during two weeks' observation and as the inguinal enlargement was bilateral and noninflammatory, the deduction was obvious. On the patient's first visit an indefinite mottling could be detected on the chest. To insure against any possible error the case was watched for a few days, local treatment only being given. There appeared a typical maculopapular eruption. Two of the lesions appeared synchronously, the third a week later and the remaining two followed in two weeks' time. The man made a rapid recovery after a few weeks' treatment. Five months after his last visit pigmentation was present on the body at the site of the old lesions, five cicatricial scars were on the penis, and a quarter-dollar-sized, sharply marginate, raised, corrugated, moist, condylomatous lesion was to the right of the anal opening. The case comes under the category of Taylor's evolution of the initial lesion in successive crops. There is a possibility of local trauma at several points being infected.

Malignant Syphilis. According to F. J. Lambkin[1] this condition is associated with an indurated sore, which, probably becoming phagedenic, is followed by rupial ulceration of the skin nodes, caries and necrosis of bone, and later by visceral lesions, cachexia, anemia and profound debility. The intensity of the virus of syphilis may be so great as to act irrespectively of the physical condition of the patient, attacking even those of the most robust constitution with the greatest virulence, and despite all treatment, but this is the exception. In the majority of cases there is present some well-marked cause which influences the progress of the disease. The following conditions, either singly or together, will generally be associated in such cases: (1) Poor physique; (2) living under bad hygienic and generally debilitating circumstances; (3) malaria; (4) the presence of any organic disease, especially renal; (5) alco-

(1) Lancet, Nov. 3, 1906.

holism, and (6) delayed and inefficient treatment. The poorer the constitution the less resistant it will be to the action of the syphilitic virus. Hygienic surroundings will certainly influence the progress of the disease for better or worse; thus the enervating climate of the tropics exercises a markedly baneful effect on it, while some of the worst cases are to be seen in overcrowded and dirty seaport towns. That malaria is a more potent factor in influencing syphilis for the worse than it has hitherto been given credit for, is now certain.

In some of the very worst cases which Lambkin has seen, the patients had either been recently exposed to malaria at the time of syphilitic infection or the plasmodium could still be detected in their blood. Any organic disease, especially renal, exerts a powerful influence on the progress of syphilis, in being in itself not only a drain on the system but also by its presence either preventing altogether or at least limiting the exhibition of specific treatment. The drunkard has a worse chance of resisting the syphilitic virus than the moderate drinker.

Nasal Primary Syphilis. A. Fanoni[1] reports four cases of primary nasal syphilis. In one the nose tip had an eroded chancre; in another the right side of the nasal septum was the seat of a chancre ulcer, in the third case there was a thickened, dull red, semilunar patch on the left ala nasi; the fourth patient had thickened incrustation of the inner aspect of the right ala nasi and of all the septum.

Diagnosis of Syphilis by Serum Reaction. This subject has been discussed by the *Journal of the American Medical Association.*[2] Bacteria contain a substance which combines with the specific immune substance of sera of animals immunized against them, and if bacteria are permitted thus to combine with the immune substance (amboceptor) of a serum devoid of complement, the resulting combination has the power to unite with the complement contained in any serum to which it may be added. Consequently, if we add bacterial substance to an unknown serum, which has been freed from complement by heating, and then find that the mixture of bacteria and serum has the power to

(1) Post-Graduate, March, 1907.
(2) June 8, 1907.

PLATE VIII.

Foreign Body in the Bladder.

Catheter removed from the bladder of a man one year after catheterization during typhoid fever. Patient was not informed by attending physician of the loss of the catheter.—Post-Graduate Hospital (Baum).

unite with the complement of a normal serum, we have evidence that the unknown serum contains immune bodies (amboceptors) which are capable of combining with the bacteria used in the experiment. This reaction can be used, therefore, in cases of a serum of known properties to establish the identity of an unknown organism, and, conversely, by using a known organism to establish that the serum of a given individual contains antibodies to that organism. The latter observation, in appropriate cases, may lead to the conclusion that the individual has suffered or is suffering from an infection with the specific organism used in making the test.

The application of this reaction to the diagnosis of syphilis was made possible by the observation of Wassermann and Bruck[1] that the infected tissues and body fluids of an individual contain sufficient amounts of bacterial substance to permit of their use in carrying out the reaction in cases in which the organism itself can not readily be isolated. At first this was found true for tuberculous infection, and soon after, in association with Neisser, it was found possible to demonstrate antibodies for syphilis in the cerebrospinal fluid of syphilitics. In the case of investigations of syphilis the original obstacle was the fact that the organism cannot be isolated for use in the test, but following Wassermann's observations it was found the tissues of fetuses with congenital syphilis contain enough of the substance of the *Treponema pallidum* to give the reaction.

Fresh organs from the fetus infected with syphilis are ground up and an extract made with salt solution, which will contain, in addition to the soluble constituents of the tissues, the soluble constituents of the organisms contained in the infected tissues. To this is added a small quantity of the spinal fluid of the patient under examination, which has been heated to 56° C. to destroy any complement it may contain, and the complement is provided by adding fresh serum from a normal guinea-pig. The mixture is left standing for an hour in the incubator, and if the patient in question is syphilitic the following reaction will occur: The syphilitic antibodies contained in the spinal

(1) Berlin. klin. Woch., Feb. 4, 1907.

fluid will combine with the treponema substance contained in the extract from the fetal tissues, and the resulting compound will unite with the complement contained in the fresh serum which has been added. As a result there remains no free complement in the mixture, which fact is ascertained as follows: A small quantity of serum from an animal immunized against the red corpuscles of another animal is heated to 56° C. to destroy all the complement it contains, and then added to the mixture of syphilitic material and serum previously described. Now if the complement of this mixture has all been combined by syphilitic antibodies the heated hemolytic serum will not be activated, and consequently will have no power to hemolyze red corpuscles. The presence of syphilis in the individual from whom the spinal fluid was obtained is shown, therefore, by the inability of the mixture of which this fluid forms a part to hemolyze the specific red corpuscles. If he has not syphilis the complement is not bound by the extract of syphilitic tissue, and hence is free to activate the hemolytic serum.

It can readily be seen that this method of diagnosis can be performed only by men experienced in the finest details of serum research, and only in places with enormous hospital facilities permitting the obtaining of fresh syphilitic fetuses at frequent intervals. As the substances involved in the reaction lose their properties in a very short time the tests can be made only when fresh material is on hand, thus restricting greatly the wide use of the procedure, but possibly in time this difficulty may be overcome. In this way it has been possible to obtain evidence of the previous occurrence of syphilis in many cases of tabes, paralysis, pachymeningitis and other parasyphilitic affections. The results so far obtained furnish support to the customary view of the relation of syphilis to many chronic nervous diseases, for Wassermann and Plaut demonstrated syphilitic antibodies in the spinal fluid of thirty-two out of forty-one paretics: and Schütze obtained positive results in eight cases of tabes in which a history of syphilis was obtainable, but negative results in four cases without a history of syphilis. In active syphilis, however, the reaction sometimes fails, and hence a negative result is not always conclusive.

Syphilis and Lingual Cancer. Pirrier[1] claims that for cancer of the tongue two conditions are necessary: The patient must be a smoker and must be luetic. H. Fournier[2] claims that leucoplakia (or, as M. Ferrand calls it, leucokeratosis) is, in type, intermediate between lues and epithelioma. Tobacco alone is rarely, if ever, followed by tongue cancer. Cancer will not develop in a healthy tongue even in a luetic; there must be a local lesion. Leucoplakia is often the forerunner of cancer. The position of Fournier is supported not only by a case cited by Barthelmy, but also by one reported by M. B. Hartzell,[3] where extensive leucoplakia during childhood was accompanied by follicular dermic keratosis and followed by tongue cancer. The patient was eleven when first seen by Hartzell. There was a dermatosis present which consisted of irregularly shaped, variously sized patches of dirty gray spines on the sides of the neck, and hempseed sized, flat, slightly elevated, scaly lesions scattered over the back. Besides the cutaneous disease, the entire mucous membrane of the lips, tongue and cheeks was a bluish white. The skin disease had lasted 18 months. After treatment the dermatosis disappeared, but the leucopakia was scarcely affected. About four years later epithelioma of the tongue was discovered. The growth was removed, but a few hours later the patient unexpectedly died from pulmonary embolism. Here the luetic element was not determined.

Luetic Infection from Eye to Eye is reported by E. Tomasczewski[4] in the case of rabbits. He was unable to detect the spirochete. The iritic lesions were those of lues.

Luetic Eyelid Lesions. Such lesions are sometimes overlooked at eye clinics, according to F. J. Parker.[5] The most common are the exanthematous lesions which usually are of a papular or tubercular variety, varying as the cutaneous lesions in other parts of the body. They usually result in breaking down and in a sloughing surface, are of rapid growth, and often involve the entire lid. Being superficial, there is little destruction of tissue. They may occur at any age and at any period of the infection. They are

(1) New York Med. Jour., Jan. 7, 1907.
(2) Bull. de l'Acad. de Méd., Nov. 23, 1906.
(3) Med. Record, Feb. 9, 1907.
(4) Münch. med. Woch., May 21, 1903.
(5) New York State Jour. of Med., July, 1907.

most frequent in infants as a pustular eruption in congenital syphilis. The tubercular variety, microscopially a diffuse gumma, results in general infiltration. This is common on the face and not infrequent on the eyelids in the earlier stages of diffuse syphilitic eruption. The circumscribed gumma usually appears at the ciliary margin, and is regarded as a late symptom, but cases have been recorded where they followed shortly after the initial lesion. The diffuse variety rapidly involves the entire lid, which becomes inflamed and swollen, and in children sometimes results in sloughing of the cornea. True gummata occur on and beneath the conjunctiva. They may also develop on the lachrymal caruncle. Conjunctival gummata begin generally in the tarsal cartilage or tissue of the upper lid; they ulcerate rapidly and cicatrize, and may resemble the initial lesion. Inflammation and swelling of the tarsal cartilage is nearly always syphilitic. The swelling involves the entire cartilage, is hard to the touch, and the skin is freely movable over it. Amyloid degeneration of the tarsus may follow hypertrophy. Tarsitis yields rapidly to specific treatment. Entropion frequently results. Dacryocystitis with stenosis of the lachrymal canal may result from extension of the disease from the nasal mucous membrane; this may extend to the orbit, resulting in necrosis of the walls, lachrymal fistula, swelling of the lids and chemosis of the conjunctiva. Luetic disease of the lids may resemble trachoma and yield only to specific treatment.

Chancre of the eyelids is much more common in males and occurs at all ages. The right eye is more often infected, being the more frequently rubbed. Ocular infection is frequently due to accidental causes. Direct infection is usually caused by kissing, young children being especially exposed to this. Infection may be caused by the coughing of a patient during a throat examination.

Indirect infection may occur by rubbing the eyelids with fingers that have been in contact with a sore. The use of handkerchiefs, surgical instruments, sponges and towels may be the means of infection. The existence of lesions of the eyelids, such as conjunctivitis, hordeolum, chalazion and blephoritis is a predisposition to infection in this way, as the tender epithelium of the conjunctiva and the edge of the lid may be easily avraded by rubbing with a rough

towel. Graefe thought that the virus entered the openings of the Meibomian glands and inoculated the lids in this way.

Chancres of the lids usually appear on the conjunctival surface, but may appear on the skin or edge of the lid if there is an abrasion. It begins near the margin, and the ulceration rapidly involves the entire lid. They may be mistaken for a lupus or an epitheloma or a suppurating chalazion or hordeolum. Cases have been reported where the lid has been excised for epithelioma. Age will be of help in diagnosis; enlargement of the preauricular glands or submaxillary glands always occurs with true chancre of the eyelids, but these glands also enlarge with chancroid. In some cases the appearance of the secondary manifestations must decide the diagnosis, unless a microscopic examination can be made. The swelling of the lymphatic glands may be very pronounced and extend from the lobe of the ear to the supra-clavicular fossa. From the glandular enlargement in chancre of the eyelids, Lavergue and Perrin concluded that the lymphatics from the inner part of the eyelids pass to the submaxillary glands, and from the outer half, to the parotid and pre-auricular glands. Virulent cases show a great infiltration and chemosis of both the ocular and palpebral conjunctiva, with the latter covered with an exuda similar to a croupous membrane. In severe infections, involvement of the cornea is most to be feared and in these cases blindness usually results from ulceration, followed by perforation and staphyloma, or a panopthalmitis and final destruction of the eye.

Lues Without Secondary Results. This is reported in 4 cases by G. M. MacKee.[1]

Case 1. The first was that of a 22-year-old clerk, who, September, 1902, had a small unindurated sore in the sulcus on the left side of the frenum for 3 days. A tentative diagnosis of herpetic ulceration was made and expectant treatment employed. The ulcer, which became slightly indurated, persisted for 3 weeks, when it healed without leaving a cicatrix, although the induration remained for a week or more. A mild bilateral inguinal adenitis entirely disappeared 4 weeks after the ulcer healed.

(1) Med. Record, April 6, 1907.

Six weeks after the first consultation enlargement of the axillary and cervical glands was observed, but the patient stated that he was subject to mild attacks of adenitis. Throughout the entire 3 months he remained in excellent general health, had no fever, no eruption, alopecia, throat or mouth symptoms, nor, in fact, any manifestation of secondary syphilis, and was therefore told that, although the danger could possibly extend over another month, he could discontinue his office visits.

On May 10, 1906, he again consulted the physician regarding a livid red infiltrated nonpruritic circinate patch covered with a few tenacious epidermic flakes on the palm of the left hand at the base of the thumb. The chain of glands along the radial side of the flexor surface of the forearm were the seat of gummatous degeneration, and the overlying epidermis was stained a deep copper color. The pharyngo-faucial and nasal mucous membranes were extensively infiltrated. The patient also complained of severe headaches and rheumatic pains. This state of affairs had existed for about 3 months, the symptoms gradually increasing in severity. Six grains of mercury salicylate were given in divided doses by means of deep muscular injections, 1 grain being administered each week. As a result of this treatment the lesions promptly disappeared. This patient absolutely denied any primary, secondary or tertiary manifestations excepting those above mentioned. In this case one must consider the possibility of the secondary eruption occurring after the ninety-day limit and being so mild as to escape his attention in spite of the fact that he had been warned of its possible occurrence. It is also possible that primary and secondary lesions existed before or after the first series of observations, and either escaped his attention or were wrongly diagnosed.

Case 2. This was that of a 22-year-old waiter with a history of several attacks of herpes progenitalis. On October 26, 1903, 3 days after sexual intercourse, he developed a group of herpetiform vesicles situated in the sulcus ½-inch from the frenum, which soon ulcerated and uniting developed a discharging ulcer about ½ inch in diameter involving the frenum and glans. Several small ulcers formed on the glans and mucous surface of the prepuce. Cleanli-

ness was difficult in this case because of the excessive purulent discharge and a somewhat redundant foreskin. Beginning on December 23, the lesions were sparked for 5 minutes every second day, with the current derived from the static coil of the Pifford hyperstatic transformer. In 17 days the ulceration healed. November 24, 1906, a papular syphilide came on the left palm, a circinate papular syphilide on both dorsal surfaces and two circinate, slightly eroded, syphilides on the glans penis. On the left shin was a psoriasic hypertrophied papule. On the right foreleg were several infiltrated papulo-squamous patches. These healed up under mixed treatment in 8 weeks. Previous to coming under care he had never had any dermatosis except slight attacks of herpes. In 1904 he married, but his wife shows no evidence of lues.

Case 3. The third case was that of a 20-year-old wife, married a year, who consulted him August 8, 1904, for a large ulcer on the right labium majus and a small one on the left. Both labia were edematous and ulcerated. The ulcers had been present 3 weeks. The inguinal glands of both sides were enlarged. The husband denied syphilis. The ulcers healed by August 22, and up to September 15 she had no secondary results. She was then delivered of a 7 months' luetic seeming child. The placenta was degenerate. A 7 months' child was born a year later covered with sores, dying soon after birth. Antisyphilitic treatment was not used, but a year later a seemingly healthy full-term child was born. The husband never exhibited any signs of lues.

Case 4. The fourth case was that of a 27-year-old bookkeeper who had a severe attack of gonorrhea on January 17, 1903, 9 days after cohabitation. Thirteen days later he developed a slightly indurated penile ulcer, which persisted for 3 months, leaving a cicatrix after healing. His gonorrhea, which was complicated with prostatic involvement, necessitated daily treatments for a period of 4 months, during which time daily examinations were made of his entire body for the secondary eruption which was certainly expected. The inguinal glands were involved, but at no time was any general adenitis, alopecia, sore throat, nor any manifestations of the suspected disease observed. On March 12, 1906, he presented unmistakable

signs of neglected syphilis. There was an ulcerating lesion of the left shin, accompanied with characteristic pigmentary changes, which had begun, according to the patient's observation, some weeks previously as a bruise, the result of an injury. The ulcer failed to improve under local applications, but promptly responded to mixed treatment.

Psychoses from Secondary Syphilis. J. G. Kiernan[1] over a quarter of a century ago pointed out that these affections were of the primary confusional type, stuporous or katatonic. D. Cappucio[2] reports a confusional mental case with some depression, symptoms appearing three months after the onset of the secondary stage. The patient was forty-five years old.

Inherited Syphilis in the Second Generation. This is discussed by E. Imparati,[3] who analyses twenty-two cases where syphilis was inherited by grandchildren. Sterility was not excessively in evidence, as some families had fifteen children. Only 50 per cent. survive the first year, and but few are free from leutic signs. The stigmata are much the same for both the second and third generation. The figures of Imparati indicate that lues more often arrests development than produces a specific destructive action.

Intra-muscular Injections of Insoluble Mercurials. According to W. S. Gottheil,[4] these drugs, properly administered by intra-muscular injection, are almost painless. If the right site in the depths of the gluteal muscles is selected, the skin made thoroughly cold with ether, the puncture and the needle withdrawal made with rapidity, though the actual injection of the suspension be done slowly, the pain is an entirely negligible factor. The gluteal skin is not very sensitive, and women stand the injections even better than men, possibly on account of the comparatively large size of these muscle masses in the female sex and the abundant fatty layer that covers them. The exceptions to this are few. Once in a long time one finds a male whose glutei are so small, and whose panniculus is so poorly developed, that it is difficult to get a tissue-mass suitable for the puncture. Exceptionally, also, one meets one of those

(1) Jour. of Nerv. and Mental Dis., 1880.
(2) Riforma Med., June 8, 1907.
(3) Gaz. degli Ospedal., No. 26, 1907.
(4) Jour. Am. Med. Assoc., Aug. 3, 1907.

neurotic and hyperesthetic individuals who faint on the incision of an acne pustule, and who will complain of suffering greatly from the injection. Both these classes, however, do not, in Gottheil's experience, make up more than 1 or 2 per cent. of cases treated.

A certain amount of discomfort is felt in the glutei for from twenty-four to forty-eight hours after the injection. Its amount varies greatly, of course, with individual susceptibility, but there is no real pain, the patient feeling as if he had received a bruise or kick. It wears off rapidly, and in three or four days there is usually no tenderness, even on deep pressure on the spot. The great majority of patients do not mind it at all; many of them, in fact, make no spontaneous reference to it at their next visit.

It is, of course, of the greatest importance for the patient's comfort that the injection should be done properly, and a quick plunge of the needle through the chilled skin and into the depths of the muscle is essential. A hesitating, slow or boring insertion is bound to be painful. Still more important is the selection of a proper site for the operation. It is not wonderful that a patient that the author saw a few days ago complained that the injections that his physician had given him had been very painful and had confined him to the house. They had all been made exactly over the great trochanters on each side, in a place where there was hardly any muscle at all, where the foreign mass was inevitably deposited under dense and resistant fascial structures, and where the slightest motion of the thigh disturbed the injured tissues.

Indurations after the injections do not occur, as a rule. They do no harm, and only betoken a slow rate of absorption of the injected material with a rather excessive reaction of the tissues; they are indications, other things being equal, for diminishing the frequency or the amount of the injections. Gottheil prefers on this account to give a 5 or 6 drop injection weekly, rather than one of double the size at fortnightly intervals.

Sulphur Waters in Syphilis. According to E. Dardel,[1] the treatment of syphilis by sulphur waters forms a very valuable auxiliary treatment, which may be combined with

(1) Med. Record, July 27, 1907.

a course of mercurial treatment, and that the water will help greatly in the absorption, action and elimination of the drug. The cure is indicated at any period of the disease, since nutrition suffers at all stages. Patients suffering from arteriosclerosis or liver trouble, and those who are highly nervous should not undergo an active sulphur cure. It is especially indicated in those who take mercury badly, or who can tolerate but a small dose of it, and in those in whom the therapeutic action of mercury is not easily obtained. It is also indicated in cases of great destruction of tissue, or severe infections in feeble or worn-out patients, and in lesions of the nervous system, ulcerative lesions that threaten great destruction to the organs affected, and other such lesions in which there is no time to lose. The treatment strengthens the patient and enables him to take more mercury and to assimilate it better. The sulphur of the water forms alkaline sulphids. Some are oxidized by hyposulphites and sulphites, but the most of it forms hydrogen sulphid, which is eliminated by the lungs and skin. It has a general tonic and exciting action, and liberates mercurial compounds stored up in the system.

Syphilis in Dogs. Canine syphilis is claimed to have resulted from inoculation by E. Hoffmann and W. Bruning.[1] Inoculation of two dogs in the cornea with chancre scraps from a lesion induced an affection presenting the characteristics of syphilis and the positive finding of the pale spirochete. Inoculation in the anterior chamber and also scarification of the cornea, in both rabbits and monkeys, induced a syphilitic keratitis. It is, therefore, not necessary to inoculate into a blood vessel, but the lymph spaces offer favorable conditions for the proliferation of the spirochetes.

Syphilis Reinfection. C. Stein[2] reports the case of a man of twenty-eight who had a chancre with numerous pale spirochetes, differing in no respect from an ordinary primary infection with syphilis; and yet the man presented the unmistakable signs of inherited syphilis or syphilis acquired in early infancy, with tertiary phenomena. This makes the ninth case on record in which persons with syph-

(1) Deuts. med. Woch., No. 13, 1907.
(2) Derm. Zeit., July, 1907.

ilis in infancy, either congenital or acquired during the first weeks of life, acquired a fresh infection in early adult life. From eighty cases of reinfection in cases of acquired syphilis, he concludes that the reinfection in many instances is conclusive testimony to the complete cure of the primary infection. He emphasizes the necessity for teaching patients this, so that those who have had syphilis in in the past may guard against contracting it anew instead of considering themselves immune. His experience also indicates that an individual with a strong, resistant organism may pass through syphilis with the organs comparatively intact and escape the dreaded consequences. The pessimistic idea that a person once infected is always infected, and immune to future infection should be combatted, he declares, for numerous and obvious reasons.

J. Brew[1] reports the case of a man treated by reputable physicians for years for syphilis who made a seemingly good recovery and remained well for fifteen years. He had a chancre, followed by secondary symptoms. He married, on the subsidence of these, a healthy woman, who bore a luetic child. This case emphasizes the warning of Stein against the assumption of complete immunity in recovered luetics.

Chancre of the Lip. Labial chancres in six women are reported by J. Kingsburg.[2] The first patient was a forty-four-year-old widow. When first seen she was suffering from severe frontal headaches, and an obstinate sore in the center of the upper lip. This sore had been present about seven weeks. It began as a hard pimple and gradually increased in size until it measured about three-quarters of an inch in diameter. The lesion showed some induration and there was considerable protrusion of the lip. The only glands palpable were the postcervical. Her throat was hyperemic, but no patches could be detected. In about two weeks a well-marked macular eruption appeared and later there was moderate alopecia. All objective symptoms soon disappeared, but the patient suffered for a time from persistent occipital headaches and severe rheumatoid pains in her hands and feet. An acute iritis that developed later

(1) Med. Record, July 27, 1907.
(2) Jour. Am. Med. Assoc., June, 1907.

was thought by oculists to be of rheumatic origin, notwithstanding the history of recent syphilis.

The second chancre was of uncertain origin, as both coitus with one lue and kissing with another were possible infective sources. The patient, a twenty-five-year-old woman, when first seen had an irregular granulation over the whole left side of the upper lip. It had existed for nearly two months and had been large since the first week. Shortly after coming under observation a small papular eruption appeared, accompanied by general adenopathy and mucous patches in the throat. Later there was considerable alopecia and examination of hair revealed a rather well-marked trichorrhexis nodosa. The hair was dry, fine and lusterless, and a majority of the hairs showed the characteristic nodes distributed at intervals, varying from one-half to two inches. About three months after the appearance of the secondaries certain pigmentary changes were noticed on the neck and soon a typical so-called syphilitic leucoderma developed.

The next case was in a twenty-one-year-old domestic, who, when first seen, had an erosion nearly an inch in diameter on the right side of the upper lip about one inch from the center. The lesion was sharply defined and was decidedly hard to the touch. It had a smooth, moderately raised surface of a vivid red color. The sore began as a small blister three weeks before and had rapidly increased in size. In a month there was a macular syphilide and general adenopathy. The submaxillary glands were but little enlarged.

The next patient was a twenty-four-year-old domestic, who, when first seen, had a slight induration in the centre of the upper lip, which had existed for six weeks. There was quite general adenopathy. The throat was hyperemic and tonsils enlarged and a small superficial patch was noticed on the right side of the soft palate. A great maculopapular eruption soon developed, and later the patient suffered considerably from extensive mucous patches in the throat.

The sixth case was that of a well-preserved fifty-seven-year-old widow, with six healthy children, who, five weeks after her second sudden marriage with a man much her junior, had chills and fever, and at the same time noticed

a small sore on her lip. Her chills and fever continued and the sore gradually increased in size. Two weeks later another sore appeared on the upper lip. This was possibly an autoinfection. When first seen there was an ulcerated lesion about half an inch in diameter, on the left side of the upper lip, nearly an inch from the median line. A similar lesion, about one-third the size, was on the upper lip just to the right of the center. Both showed marked induration. The submaxillary glands on the right side had been excised when the patient was a young girl, but those on the left were slightly enlarged and the epitrochlear glands were palpable. There had been no previous symptoms of malaria, but on examination the spleen was found to be large and there was a temperature of 101 F. A macular eruption developed later and the patient suffered considerably from severe headaches. The husband had contracted syphilis from a prostitute several months before his marriage. The chancre had entirely disappeared, as well as the eruption, and he did not imagine that the few sores in his mouth could possibly communicate his disease to another.

Luetic Alopecia. According to H. G. Klotz[1] a loss of hair is not a common or regular symptom of the early stages of syphilis, although a certain number of cases may be accompanied by a diffuse loss of hair, varying in degree, similar to that observed after other infectious diseases. There is, however, a form of alopecia that occurs almost exclusively in syphilitics, and it is so characteristic as to be diagnostic of syphilis, either acquired or hereditary. It occurs in the form of ill-defined, irregular, small, sometimes coalescent, patches of baldness, distributed principally over the back and upper portions of the scalp, and giving it a mangy or moth-eaten appearance. It generally follows a very tedious course, although terminating in restoration of the hair.

Alopecia in Hereditary Lues. According to Finkelstein alopecia in hereditary lues is manifested by a scarcity of head hair, eyebrows and eyelashes especially shown at the same time exanthemata. Alopecia in children, as differentiated from that of adults, is, according to Gaston, shown in bald band-form stripes on the head, which, according to Parrot, are located on the posterolateral, and also, accord-

(1) Jour. of Cutan. Dis., March, 1907.

ing to Diday, on the frontoparietal parts. These are covered with lanuginous, depigmented hairs. This, in Hochsinger's opinion, is due to diffuse infiltration of the skin of the head, eyebrows and eyelashes. The soil for these infiltrations is always prepared by seborrhea. The combination of head and superciliary region baldness and want of eyelashes is characteristic of this type of alopecia. Lues and seborrhea here aid each other. According to C. Leiner,[1] however, seborrhea alone, or seborrhea with eczema, may cause this type of alopecia. The acquired and congenital luetic alopecia, according to Leiner, differ. There are two types of acquired luetic alopecia: The defluvium capillorum diffusum and the defluvium capillorum circumscriptum (alopecia areolaris). The first, which is sometimes accompanied by seborrhea, is the falling out of the hair all over the head at the time of eruption, which is analogous to the alopecia of acute febrile disease. Alopecia areolaris is characterized, on the occiput and temples especially, by hairless spots, while the hair elsewhere is normal. It shows no tendency to spread. Leiner reports 3 cases of combined diffuse and areolar alopecia in congenital lues.

Chancre Excision and Constitutional Lues. A. Neisser[2] states that syphilis becomes rapidly constitutional; chancre excisions made 8 hours after infection failed to prevent constitutional lues.

Extra-Genital Syphilis. This subject is discussed by E. Ivanry,[3] who makes an analysis of 138 cases, of which 104 were strictly cases of extra-genital infection. The others were pregenital infection and *syphilis d'emblec* (cases where site of infection cannot be determined, although it is clearly not of genital origin). There were 70 males and 68 females. Twenty-seven were children under 15; the rest were adults. The oldest patient was a 68-year-old male; the youngest 11 months. Of the women 18 had borne children. There were 12 married men. There were 52 lip chancres (38 women and 21 men). Of these 15 were on the upper lip, 30 on the lower, 5 on both lips and 2 in the corner of the mouth. Chancre of the tonsil was present in 28 cases (12 men and 16 women). Gum

(1) Amer. Jour. Derm., March, 1907.
(2) Amer. Jour. Derm., February, 1907.
(3) Amer. Jour. Derm., June, 1907.

chancre and tongue chancre were each present once; chancre of the chin, 5 times; face, twice; eyelid, once; mammæ, 6 times; fingers, 7, and arm, once. Vicinity of the genitals and unknown places elsewhere, each 17 times. Lip chancre usually resulted from kissing rarely from fellatio or cunnilinctus. With the exception of the 11-months-old child who was infected by the nurse in quieting it and which in turn infected its mother all the children were infected by a kiss. Three were infected by nurses or domestics. The chin chancres in the men were ascribed to the barber. The eyelid chancre was charged to a kiss. The breast chancres were on the right side in 4 cases, on both in 1 case, and on the left once. In 1 case the mother was infected by a child infected by its nurse and in turn infected her other children. In 1 cases the chancre of the right breast was given by a nursling suckled at the time with her healthy child by a previously healthy mother. One breast chancre was due to the kissing and suckling of a lover. The finger chancres occurred 3 times on the right index, 3 on the left middle finger and once on the left index. Four cases occurred in physicians and 1 in a midwife. The arm chancre was charged to biting. Chancre on the abdomen and parts adjacent was present in 12 cases; all men. In 5 cases the perineum, buttocks and anus were effected. In 2 cases they were due to sodomy. One of the buttocks was charged to a kiss. Of the 17 *syphilis d'emblec* cases, 12 were in children.

Pilocarpin in Syphilis. This drug is of much value as an adjuvant, according to W. J. Robinson;[1] who claims that it is a most remarkable glandular eliminant, and glandular elimination is one of the most important factors in the successful treatment of syphilis. Pilocarpin is of value in all secondary manifestations of the disease. There are many patients who become intolerant to the further use of mercury; the system seems supersaturated and, continuing the mercury in such cases, means injuring the patient. Discontinuing the mercury, giving pilocarpin in the interval, enables us to resume the former drug with excellent effect. Pilocarpin should be prescribed alone, either in pills or solution, and should be given in doses of from 2 to 8 milligrams (1-32 to ⅛ grain) two or three times a day.

(1) Med. Record, June 15, 1907.

CHAPTER VII.

GENITO-URINARY MEDICINE AND SURGERY.

The prostate viewed from a conservative standpoint still dominates genito-urinary literature.

Prostatectomy in Diabetics. Prostatectomy is not absolutely contraindicated in diabetic subjects, according to J. Wiener,[1] who cites three operations under nitrous oxid gas anesthesia. His first case was that of a sixty-three-year-old man, who for five years had 1½ per cent of sugar. Five days before the operation there was sudden retention of urine, requiring catheterization from that time. This was painful, and was accompanied by some bleeding. The finger in the rectum revealed a large, very tender prostate. The urine was acid, specific gravity 1.034, containing a trace of albumin, 1 per cent. glucose, and many red blood cells. Operation on September 4, 1903, under laughing gas. The bladder was opened through a suprapubic incision and the prostate removed in one piece. It was deemed well to reduce the anesthesia to a minimum. Accordingly no sutures were employed. A rubber tube was introduced into the bladder and the wound was strapped with zinc oxid plaster. The entire operation lasted eight minutes. The prostate was as large as an orange, soft in consistency and the prostatic urethra passed through it near its anterior surface. During the first three weeks eight-tenths of 1 per cent. of sugar was frequently found in the urine. The man was put on strict diet, and the sugar disappeared for a time. Sounds were passed at regular intervals. The wound healed slowly, but steadily, and the man was able to go home with a small sinus on October 21, 1903. After leaving the hospital the sugar reappeared in considerable amount and probably delayed the healing of the sinus. The man was again put on a strict diet, but it persisted, although in smaller amounts. Two

(1) Med. Record, Dec. 15, 1906.

months after the man left the hospital his wound was completely healed. He could hold his water two and a half hours in the daytime and six hours at night. There was only a dram of residual urine. For over three years the man has remained in the same excellent condition. The other two cases were similar.

Prostatic Massage. In massage of the prostate, according to F. C. Valentin and T. M. Townsend,[1] the apex of the prostate should be the first point of attack. The finger is partly bent and slightly withdrawn with each downward stroke. The strokes at first are performed very gently and their force gradually increased until the point massaged is felt to grow softer under the compressing finger. The same process is repeated for each lobe, extending the manipulations higher and higher until the base of the organ is reached, whenever this is possible. Ordinarily extrusion of prostatic juice from the meatus will begin before the finger has attained the middle of either lobe. After the prostate has been sufficiently massaged, stripping the vesicles is performed in the same manner, except that lateral strokes are added to those from above downward. These lateral strippings must be performed on each side from without toward the median line, on account of the angle which each vesicle forms on itself. Without these lateral strippings only the lower part of the vesicles could be relieved.

The force employed in massage and stripping is incapable of general description. It is safe to let each patient's sensations govern. If the finger's contact with certain points in the prostate and vesicles gives more pain than when other parts are treated, the sensitive points should be more lightly pressed on. Under cautious digitalization, sensitiveness of these points will soon disappear. As in all similar procedures, gentleness does not exclude thoroughness. Indeed, special caution should be exercised, lest excessive zeal and energy convert subacute or chronic prostatitis, or vesiculitis, into acute inflammation of these organs.

The number of strokes to be employed in massage and stripping is governed by the local effect. When a region

(1) Med. Record, June 29, 1907.

stroked on is felt to yield its hardness, even to a slight degree, attention may be given to other parts of the organ, in the succession mentioned before. According to the region massaged or stripped, one to two seconds are devoted to each stroke.

The success attained and the patient's tolerance are the guides for the length of each séance in the beginning. Later, when the patient is well on the road to recovery, his tolerance to stripping and massage may exceed the operator's physical endurance.

In exceptionally acute cases the treatments may demand daily very gentle repetition. As the acuteness subsides the intervals will advantageously be extended to every two or three days, and in chronic cases, every four or five days is the period that will be required. When the prostate or vesicles are found to yield to digitalization it is due to extrusion of their contents into the posterior urethra. When there has been no recent coitus or seminal emission the quantity of these contents may be so large that the merest contact will produce a copious overflow. Even without such an excess, the detrusors may be so active as to violently force the expressed juice through the urethra and out of the meatus. This is more likely to occur when posterior urethritis coexists. In other cases, especially while acute prostatitis or vesiculitis renders the organs tense, no visible juice can be immediately expressed from the adnexa in the first or second séance. This also happens in mild chronic prostatitis or vesiculitis. In every case it is well to let the patient lie on the table for a few minutes after treatment, for the reason to be mentioned later. Juice will then generally ooze or drip from the meatus, having been retained by reflex spasm of the compressor, evoked by digitalization. In some cases no external evidence of success is manifest before the patient's first urination after treatment. The urine, which may have been clear before, will then be turbid and contain coarse flakes, filaments and shreds, in accord with the condition of the adnexa and the amount of juice expressed therefrom. Some patients never present the contents of the prostate or seminal vesicles except in urine as above conveyed.

When the posterior urethra is not especially sensitive and when the condition to be overcome causes the pros-

tate to project more into the bladder than into the rectum it will be well to perform massage, while as large a sound as can comfortably be inserted is held against the lobe that is being treated. Effective as this aid to treatment is, its use cannot be recommended to any except those who have considerable experience in genito-urinary instrumentation.

Some patients, who have never fainted before, may lose consciousness if allowed to arise from the table immediately after massage or stripping. It is, therefore, a wise rule not to allow a patient even to raise his head until the pulse has regained its regularity and vigor, and the pupils react promptly to light. No matter how stoutly the patient may assert his perfect well-being, this precaution should always be observed.

Whatever be the after-treatment indicated, the patient should empty the urine that has accumulated in the bladder while he has been on the table. In so doing he washes away any of the expressed juice that may remain in the urethra or may have regurgitated into the bladder. If irrigation or instillation with silver nitrate is to follow the massage, its efficacy would be much reduced if not entirely inhibited by the thick precipitates that will be produced with the residual expressed juice. It must be remembered, however, that in most patients reflex spasm of the compressor has been induced by the digitalization. This spasm rarely ceases in less than five minutes after treatment. This condition is productive of considerable unnecessary alarm, especially when a desire to urinate is present. The desire is apt to be very marked in neurasthenics, whose kidneys at times excrete an immense amount of urine, especially under the excitement of being treated. When assured, however, that it will be impossible for them to urinate until after the time mentioned, their fears will diminish and on the expiration of the given time they will void their bladder contents satisfactorily. The conditions for which massage or stripping, or both, are required must govern whether there shall be any treatment at all thereafter, or whether irrigations or instillations with silver nitrate, protargol, or any other of the silver salts or potassium permanganate shall be employed.

As in all affections of the organs under consideration, much harm can be done by overtreatment. Singularly

enough the patients in this regard are most at fault. Past experience having shown them that the general depression, lassitude, etc., that accompanied their condition was promptly relieved by the massage or stripping then required, they are wont to attribute, for a more or less extended period after discharge from treatment, all the unpleasant manifestations that may be due to business cares, family annoyances, indigestion, constipation, etc., to engorgement of the urethral adnexa. Then they importune their physician for massage or stripping.

Prostatitis and Prostatic Enlargement. G. Li Virghi[1] found the colon bacillus alone in sixty cases of prostatitis and associated with other germs in sixty-five others, all with gonorrheal antecedents. In thirty-eight others without gonorrheal antecedents the colon bacillus was present in all but six, and in these cases the prostatic affection had healed under treatment. Chronic prostatitis is invariably a mild toxi-infection of the prostate, due to the colon bacillus. Enlargement is the final outcome of the chronic inflammation. The result of the toxi-infection is a slow sclerotic process. The only means of arresting it is by massage of the prostate, prostatic urethra and neck of the bladder. When not too far advanced this may cure chronic inflammation definitely and completely.

Prostatic and Seminal Albuminuria This condition, according to W. G. Young,[2] occurs in prostatic congestion and a mild inflammation, in individuals who are continent or whose sexual lives are irregular. In one of the cases reported the patient was continent; the other had practiced withdrawal for several years. Habitual sexual excitement without gratification is an important factor in bringing about the condition of the prostate and vesicles responsible for this form of albuminuria. Constipation is usual in these cases and is a factor in causing and keeping up the trouble.

The prostates in these cases are found to be tender, slightly enlarged, soft and edematous. The vesicles are usually tender, often distended, and the posterior urethra very sensitive. An interesting feature in these cases is the fact that the albuminuria is intermittent. It is sometimes

(1) Gaz. degli Ospedal., xxviii, No. 8.
(2) New York Med. Jour., Jan. 5, 1907.

absent in the morning, but present the same afternoon. The prostate and vesicles are in a relaxed, atonic condition and exercise acts like massage, squeezing out their contents into the posterior urethra and bladder.

Prostate Cirrhosis. Under the title of fibrous prostate enlargement this subject is discussed by the *Therapeutic Gazette*.[1] There is present here the usual shrinkage and atrophy due to cirrhosis, with a resultant ringlike induration of the musculature of the internal vesical sphincter. Here symptoms of enlarged prostate (slowness in starting micturition, weak, interrupted stream failure in emptying the bladder resulting in overfilling and constant dribbling), are even more pronounced than in edematous enlargement and the necessity for surgery is even more urgent. Removal is here more difficult. Prostatectomy here relieves because the indurated ring is broken in cases of internal vesical sphincter contracture. The Bottini operation, preferably through a perineal incision, is advisable. Pardue[2] advises the following procedure:

The patient being placed in the lithotomy position and the grooved staff introduced into the urethra, cut for two inches through the perineal raphe to the staff—thus opening the urethra. Incision of the membranous portion should be avoided lest the external vesical sphincter be injured. A director is run along the staff groove into the bladder and the staff withdrawn. The right forefinger is then inserted along the director into the bladder. The membranous urethra readily admits the finger, but to pass the prostatic urethra considerable force is often required. The left forefinger is then passed into the rectum and the thickness of the prostatic ring determined by the two fingers. The prostatic urethral mucous membrane is then split with the right forefinger. The prostatic ring is now split between the urethral and rectal forefinger toward the rectum as far as desirable. This should be done until the bladder entrance is loose and the finger slips in and out freely. The ring may require touching with a probe-pointed knife. A stiff thumb-sized drainage tube is passed through the perineal wound into the bladder and held in place with the dressings by a T-shaped bandage. In a week

(1) July 15, 1907.
(2) Clinical Jour., April 17, 1907.

a tube of smaller caliber is substituted. This should be worn for a week and then removed and the perineal wound allowed to heal. Slight urinary incontinence may occur after tube removal, but it soon disappears if the compressor urethræ have not been cut.

Primary Sarcoma of the Prostate. Charles A. Powers[1] reported the case of a man sixty years old who had had no bladder trouble until two months before he was seen, at which time he began to notice a little pain and discomfort on urination, and he began to rise in the night to urinate. The symptoms rapidly increased in severity and the patient lost flesh and strength. The man complained of constant severe pain in the hypogastric region, with a constant pain, less severe in the recto-perineal region. He was urinating about every one and a half hours, urination being difficult and painful. The urine was normal. Catheterization found no residual urine whatever. Rectal examination revealed a very large, rounded, slightly nodular, balloon-like prostate. The finger did not reach the upper margin. A tentative diagnosis of sarcoma was made. A perineal prostatectomy was done. The process of enucleation was attended by profuse, alarming hemorrhage. This was difficult to check. Frequent hemorrhages made it necessary to stop and pack. Nowhere could a lead be gained between gland and capsule. Friable masses were reamed out from both sides of the gland; these had the appearance of sarcoma. It was not possible to entirely get beyond the growth. The patient succumbed to a double pneumonia on the fifth day. The growth was a small, round-celled sarcoma. There are but nineteen additional authentic cases of primary sarcoma of the prostate, microscopically proven. Twelve of these were in children under fifteen years of age; seven of them were of the small, round-celled type. Each of these patients succumbed to operation or to a recurrence of the growth.

Prostatectomy. In the discussion of prostatectomy before the 1907 Congress of German Surgeons, Kummeld[2] of Hambogheid holds that the time for operating is not in the early stage, but later, when, after continued catheterization, there is residual urine, especially if cystitis or hemorrhage

(1) Jour. Am. Med. Assoc., June 8, 1907, p. 1988.
(2) New York State Med. Jour., June, 1907.

are present. All the prostate should be removed as extirpation of the middle lobe alone may be followed by recurrence.

Operation is contraindicated in extensive arteriosclerosis, in insufficiency of kidney, in parenchymal nephritis, in atony of bladder where walls are non-elastic. Prostatectomy gives an operative mortality of 10 per cent. The suprapubic route is to be preferred as it affords better view of diverticula and hidden stones, and leaves generally no fistula, no insufficiency and no impotence. All these disturbances may occur after the perineal operation. In cases presenting marked rectal bulging out in men with much abdominal fat, the perineal route is advisable. In forty-one operations (nine carcinomata) the mortality was 33 per cent. In all cases voluntary urination followed with moderate capacity of the bladder. In some instances stricture followed. All were done with lumbar anesthesia. After opening the bladder and pushing the prostate forward from within the rectum the mucous membrane of the bladder is incised in a curved direction around the urethral orifice. The prostate is then shelled out. If there is no infection of the mucosa this is united and the bladder is first closed, then the abdomen, and a permanent catheter is placed in the urethra.

Rydygier (Leurberg) advised early operation, not waiting till daily catheterization is necessary. He always uses the perineal route, and does not open the urethra. He incises the capsule, enucleates the lobes, leaves a narrow (1 cm.) strip along the walls of the urethra, closes the wound, and has seen no fistula following. His patients get up on the second day.

Israel is more conservative. On account of the high mortality he only operates when catheterization is impossible, and always uses the suprapubic route, even in fat men. As he once had severe hemorrhage on the fourteenth day he drains the prostate cavity and leaves the bladder open.

Roosing (Copenhagen) resorts to operation only when hemorrhage or stone is present, or when catheterization is impossible. He opens the bladder from above and only does a partial operation (removes valve-like flaps, etc.). He condemns general prostatectomy on account of severe psychosis after them (suicides, etc.). After vasectomies 60

per cent. of improvements occur. In severe cystitis he makes a small fistulous opening in the bladder and inserts a permanent catheter, through which he washes, with silver nitrate. Free exit for urine is important, not removal of prostate.

Payr (Graz) has done two operations under cocain, and by injecting the solution under the capsule the enucleation was made easier.

Wullstein (Halle) makes a convex incision down over mons veneris and does a double-sided temporary pubotomy, having a narrow bridge of bone on the lower margin of the symphisis. The bladder is kept dry by placing catheters in the ureters for two or three days.

Prostatitis. E. G. Ballenger[1] analyzes 100 prostate cases. In more than half the organ was chronically inflamed; nearly one-third were normal. In chronic inflammations nearly 80 per cent. gave a history of a previous gonorrhea. In one patient are found large numbers of colon-like bacilli in the prostatic secretion, but no gonococci. The average age of the patients was thirty, the ages varying between nineteen and fifty years. Ballenger believes that in the majority of patients chronic prostatitis and seminal vesiculitis are insidious, the patient being unaware of the fact that his prostate is involved. The prostate gland is without doubt the cause of the majority of obscure urinary and sexual symptoms, and where there is any uncertainty as to their origin this organ should always be examined. Among the factors that tend to perpetuate a chronic or recurrent gonorrhea a nidus of infection or irritation in the prostate is the most frequent cause. It is this variety of prostatic inflammation that the largest number of errors are made in the diagnosis. Palpation, pus and proteid are the three things to rely on in reaching a conclusion as to the condition of the prostate. By palpation through the rectum the gland, if diseased, may be found enlarged, nodular, irregular, boggy, or apparently normal. Pus in the secretion expressed from the meatus or found in the urine or fluid voided after massage, when the urethra and bladder are excluded as possible sources, is positive proof that the prostate is inflamed. Proteid in the fluid passed after massage is equally as reliable as pus in the diagnosis of prostatitis.

(1) Jour. Am. Med. Assoc., June 8, 1907.

Drainage in Prostatic Disease. W. C. Lusk[1] advises drainage of prostatic abscess through the ischiorectal fossa, where the abscess has been ruptured through the urethra and where a tense elastic tumor bulges toward the rectum.

Permanent Drainage in Prostate Hypetrophy by a soft rubber catheter is highly praised by Vogel,[2] who asserts that the procedure gives astonishingly good results in the stage of congestion where there is a vicious circle in which the enlargement of the gland causes retention of urine, and this in turn occasions congestion of all the pelvic viscera and enlarges the prostate. Continuous catheterization, relieving vesical distention, brings about an improvement, which continues a considerable length of time. Even in the later stages of the malady great relief follows the occasional resort to this procedure. The patient in this way reacquires the power of emptying his bladder unaided, or if improvement be of short duration benefit follows, leaving the catheter in for an hour or two a day, every other day. The catheter should be inserted only far enough to allow its eye just beyond the sphincter. It must be firmly fixed in this position. Two strips of adhesive plaster about 5 cm. in width and 15 cm. in length are applied at their middles to the catheter at the meatus in such a way that their ends form a cross. These four ends are fastened to the glans and are further secured by a strip passing circularly around the coronary sulcus, though this must not constrict the organ. The danger of cystitis must be reckoned with in this method, hence the most scrupulous asepsis is an essential.

Prostatectomy and Malignancy. M. Andre[3] reports a case tending to support the view that when recurrence, after prostatectomy, for simple hypertrophy, is observed, the condition is malignant. Ten per cent. of cases of alleged simple hypertrophy are, according to Motz and Albarran, really due to malignancy. André reports the case of a sixty-two-year-old farmer whose prostate was removed perineally in 1903. Recurrence soon developed. The malignant nature is now beyond question, but the patient is still in good health. He only complains about it being difficult to introduce the catheter.

(1) Ann. of Surg., January, 1907.
(2) Berlin. klin. Woch., May 20, 1907.
(3) Ann. d. Mal. d. Org. Gen.-Urin., xxiv., No. 13.

Prevention of Epididymitis. This, according to W. T. Belfield,[1] may be accomplished by the following procedure: The vas is held by the fingers against the skin of the scrotum near the median line, while a half-curved needle is passed through the skin under the vas. A half-inch incision exposes the vas; a transverse or longitudinal incision into the vas opens its canal. The blunted needle (curved) of a hypodermic syringe can be passed into this minute canal, and a watery solution of any chosen agent injected; this liquid traverses the vas and ampulla, and enters the seminal vesicle. A fine silk worm gut suture is passed into the lumen of the canal at each extremity of the incision and out through the wall of the vas a quarter inch or more distant; one suture end is then passed through the skin and the two ends tied loosely outside. This suture entering the lumen of the proximal end serves to guide the needle when daily injections are to be made. When complete transverse section of the vas is made the suture arrangement is identical with that described for the fistula formation. When the incision into the vas is longitudinal an additional suture (catgut) is passed through the edges and tied loosely above the skin. This operation is done under local anesthesia in the office, the patient walking away at its conclusion and losing no time from his vocation. When restoration of the canal is desired, the silk worm suture is tightened so as to bring the cut ends in apposition; when the wound is healed the suture is removed. Restoration of the lumen of an occluded vas is accomplished by excising the occluded portion and suturing the divided ends in the same way; the lumen of the vas is maintained during healing by the thread within it.

Treatment of Epididymitis. W. Johnson[2] reports excellent results from application of adhesive strips, so placed that they form a sling. The technic follows: After shaving the parts, the patient being in dorsal decubitus, a strip of zinc oxid plaster from two and one-half to three inches in width, is applied to the lower abdomen, from one and one-half to two inches from the median line; the strip, face upward, is taken around and under the scrotum, elevating the testicles to a level at least as high as the penopubic angle

(1) New York Med. Jour., Nov. 24, 1906.
(2) St. Louis Courier of Med., December, 1906.

and forming, as it were, a sling; the other end of the strip is passed upward on the opposite side of the median line of the abdomen. A second strap is similarly applied and adjusted about the scrotum; a few short straps are placed across the anterior portion of the scrotum. Johnson emphasizes the fact that there should be no pressure made on the inflamed tissues.

Epididymitis, according to J. Neuberger,[1] developed in but six out of 200 patients whom he treated for gonorrhea on the principle of injection of small amounts of a weak disinfectant, left in contact for only three or four minutes, repeating the injection three or four times a day. He warns the patient that the fluid must be injected very gently, but injecting it very cautiously and slowly, as the patient stands with the penile portion of the urethra pendent, carefully refraining from distending the urethra. If the gonorrhea runs a mild course it heals in from two to four or six weeks under this gentle treatment with a weak disinfectant. In case of much inflammation and edema, antiphlogistic measures are used at first, and then injections only of 3 c.c. of the disinfecting fluid. After the acute and subacute stages are past, irrigation according to Janet, will then quickly change the picture and complete cure soon follows, as a rule.

Testicular and Ovarian Internal Secretions. The internal secretions of the ovary and testicle, according to M. F. Lewellyn,[2] contain principles antagonistic, at least in part, to the thyroid secretions. He reports cases of exophthalmic goiter treated with success on this principle.

Intestinal Obstruction from Persistent Urachus. This occurred in a case reported by A. Fanoni.[3] The urachus was about the size of the little finger. Its lower attachment was into the fundus of the bladder. The upper attachment was into the anterior abdominal wall, one inch above and two inches to the right of the umbilicus. There was no connection with the liver and the upper end of the duct, divided into three branches, which spread out in the shape of a fan. A portion of the intestine was caught between this cord and the abdominal wall. The urachus was ligated at both ends

(1) Derm. Zeit., May, 1907.
(2) Australasian Med. Gaz., May 29.
(3) New York Post-Graduate, July, 1907.

and its side. The patient was in perfect health three weeks after the operation and remained well for about two months, when he complained of cramp-like pains in the abdomen and of constipation. On examination a swelling was found over the side of the stump of the urachus, which had been left in the abdomen. An incision was made over the tumor, and when the structures down to the peritoneum had been cut through, some cheesy material was found and removed, together with the three remnants of the roots of the urachus. Further, a band of adhesions had formed between the omentum and the urachal stump, and a loop of small intestine had become constricted. A lateral intestinal anastomosis was made. There was no sign of tuberculosis in either the intestines or the peritoneum. The patient made an uninterrupted recovery.

Hypospadia. A hypospadias operation, urged by R. B. Russel,[1] consists of two procedures. At first the penis is released and straightened and the glandular portion of the urethra is formed and lined with preputial skin. At the second, the perineal and penile portions of the urethra are formed and closed, so as to complete the channel from the perineal opening to the glandular urethra. For this operation suprapubic drainage is employed. A year or more should elapse between the two operations.

Persistent Priapism. This condition is discussed by F. Terrier and C. Dujarier,[2] who describe one case and analyze forty-eight. In sixteen of the forty-eight cases the condition was referable to leukemia; in two to a fall, on the perineum or kick from a horse, and in twenty no cause could be discovered. The necropsy findings in four cases and the findings during operations in ten others are reviewed. Good results were obtained in three out of ten cases treated by incision of one or both corpora cavernosa. Unfortunately, conditions favor infection. In two cases the colon bacillus was found in the blood at the first incision. In the case described suppuration occurred, and part of the right corpus cavernosum was thrown off in an eschar, after which healing proceeded rapidly, with no recurrence of the priapism.

Tuberculosis of the Testicles. On analysis of 100 cases

(1) Ann. of Surg., August, 1907.
(2) Rev. de Chir., May, 1907.

of testicle tuberculosis, E. L. Keyes, Jr.,[1] found that in 71 per cent. tuberculosis was first observed between the ages of fifteen and thirty-four, while in 65 per cent. the testicle was first attacked between these ages. In forty-nine cases no evidence of any previous tuberculosis existed when the testicle first enlarged, while in thirty-six cases there were more or less ancient foci of the disease elsewhere in the body. Tuberculosis of the lung, preceded invasion of the testicle fifteen times; bone or joint tuberculosis, eight times; renal tuberculosis, eleven times; active prostatic or vesical tuberculosis, thirteen times; inguinal adenitis and anal fistula, each twice. The onset was acute in thirty-four cases; chronic in thirty-four. Breaking down occurred in seventy-six cases. Epididymectomy is the radical operation of choice, unless there is hyperacute and generalized epididymo-orchitis, or unless the testicle is destroyed by suppuration. Many patients permit the removal of one testicle in the hope that the disease is confined to the one organ, and may be eradicated. Relapse on the opposite side almost inevitably occurs.

Orchitis in Typhoid. Typhoid orchitis is discussed by N. B. Gwyn,[2] who cites two cases. In one, onset of the orchitis was marked by a severe abdominal pain in the appendiceal region, with marked distention, slight rising pulse and temperature, but no leucocytosis, muscular rigidity or signs of collapse suggesting perforation. Following this the testis on that side became enlarged. The swelling subsided quickly, the pain disappearing by the fourth day. In the second case orchitis occurred during the fifteenth week. Pain in the testis and groin was most severe, the gland rapidly reached the size of a goose egg; constitutional disturbance was marked. After a week the testicle suppurated, opening through the scrotum.

Orchitis After Mumps. Rebaudi[3] describes fourteen cases of orchitis, complicating parotitis epidemic several years ago. Thirteen now present atrophy of the testicle involved. In six cases the sound testicle is hypertrophied. These men have children, but none of the others have. Although the process was unilateral, spermatozoa are not to

(1) Am. Jour. of Urol., May, 1907.
(2) American Medicine, February, 1907.
(3) Gaz. degli Ospedal., Nov. 10, 1907.

be found. Cases with gonorrhea are not included. Mumps may occur, of which orchitis may be the only manifest symptom. Orchitis may accompany tonsilitis and testicle atrophy may result from this.

Testicle Traumatism and Industrial Insurance. This is discussed by V. Balthaz,[1] who concludes that the only testicle traumatisms which can invalidize a worker are those which abolish the internal secretion. Losses of the internal secretion are more serious the younger the victim. The amount of incapacity is 25 per cent. for an adult between thirty and forty; up to 50 per cent. for youths under twenty, and down to 10 per cent. or zero for persons over fifty.

Testicular Atrophy. Achard and Demanche[2] report the case of a sixty-eight-year-old man who had mitral insufficiency. There existed atrophy of the testicles, which had developed after a violent traumatism at twenty-five. This had been followed by a diminution of muscular activity. The patient's face was almost smooth, his hair was extremely thin, and the hair over the entire body was almost lacking. The visage was pale and wan. The cheeks were pendent and the fascies recalled that of an old woman with myxedema. The relation between testicular insufficiency and thyroid insufficiency is suggested.

Phimosis. The constitutional relations of phimosis is discussed by W. Witzenhausen,[3] who cites cases where constipation in infants was relieved by circumcision, and explains the beneficial effect of the procedure as follows: As a result of preputial stenosis urination is rendered difficult and ultimately the bladder is imperfectly emptied, becomes dilated, and a more or less serious state of overflow incontinence results. As a consequence the pelvic organ was crowded by the enlarged bladder, the rectum is pressed on and constipation results. In consequence, more or less serious and persistent disturbances result, which require a long time to subside, even after the initial source has been relieved by circumcision.

Avulsion of the Penis. Biondi[4] discusses a case in which the penis of a sixty-four-year-old man was pulled off by an

(1) Ann. d. Mal. d. Org. Gén.-Urin., Nov. 12, 1906.
(2) Gaz. des Hôp., Dec. 26, 1906.
(3) Münch. med. Woch., May 28, 1907.
(4) La Clinique Med. Jour., 1907.

energetic young woman whom he attempted to rape. On experiments, consequent on the legal issues raised, it was found that the nature of the injuries sustained in the case were exactly similar to those which were brought about when the penis was forcibly avulsed. The amount of force required to tear off the penis in a state of flaccidity was far in excess of that which any ordinary person would be likely to possess. But when the penis was erect (in the cadaver this was accomplished by injecting sodium chlorid solution direct into one corpus cavernosum) the resistance, which was chiefly due to the tunica albuginea, was very much reduced. To such an extent, in fact, that moderate force, within the possibility of a woman of average strength, was quite sufficient to completely avulse the penis. The woman's story was that the man tried to violate her and that in self-defense she pulled forcibly at the penis, which came off in the struggle.

Urethra Rupture. According to Reginald Harrison[1] this condition is divisible into two classes. Those in which an instrument can be passed into the bladder and those where this was imposible. Persons will bleed from the urethra from contusions alone, but these are not likely to be mistaken for those lesions where the more serious injury has happened.

The kind of lesion that follows the violence applied to the perineum sufficient to partially or completely rupture a tube so fairly well protected as the deep urethra, is rarely clean-cut, but is generally much contused. The urethra is not infrequently more or less separated from its connections, and in this way ecchymosis may readily spread upwards to the neck of the bladder, and even into the space of Retzius. Such wounds are extremely liable to become septic, and if the liability is added to by the retention of a catheter a dense cicatricial stricture, not infrequently of some length, is quite unavoidable.

On the other hand, where a catheter cannot be passed after the infliction of the lesion and a perineal section is provided, sepsis is unlikely, and the damaged part is similar to that of a median cystotomy with drainage where repair takes place without any contraction or stricture fol-

(1) Interstate Med. Jour., September, 1906.

lowing. The second variety of rupture of the deep urethra is that which not infrequently complicates fracture of the pubic arch of the pelvis. Here the canal may either be partially or completely torn across by the sharp edge of the displaced fractured ramus of the pubes. In this way the urethra may be cut across or punctured as by a knife. This accident may be occasioned in various ways by which the circle of the pelvis is submitted to severe crushes and so gives away at one of the weaker spots in its continuity. This happens in the hunting field, in steeple chasing and in accidents of this kind, where the horse rolls over his unfortunate rider; in crushes, as against walls by a moving cart, where the pelvis of the individual is suddenly and violently compressed.

The surgeon should be careful to satisfy himself that the urinary apparatus has escaped injury. Retention of urine following such like injuries should excite suspicion. Especially should care be taken where persons remain insensible, or were insensible, after or at the time of the accident.

Amongst the worst cases of this kind Harrison has seen was one in which this discovery was not made till the third day after the pelvis had been broken by a fall from a cart and the urethra ruptured. He opened the latter from the perineum and put a drainage tube into the bladder, letting out an enormous collection of putrid urine and decomposing blood clots. The patient made a good recovery and no stricture followed. This course is advised where the deep urethra is ruptured by a fractured pelvis.

Retention of urine sometimes occurs in connection with fractures of the pubic arch by the urethra being pressed on by the displaced bone or by clots the latter has caused. This may be suspected when, after the injury, any urine that may be passed remains clear of blood and there is no evidence of bleeding connected with the urethra or the catheter that is used for examination. In these cases the use of the catheter that is used from time to time, or a tied-in catheter, will probably suffice. It is an important distinction to draw in this class of cases between the retention due to rupture of the urethra complicating the fracture and that arising merely from lateral compression of the canal. Many patients with fractured pelves have been lost by not recognizing that the urethra had also been rup-

tured and delay has thus occurred in providing a free escape for the urine in the manner described. Ruptures of the pendulous portion of the male urethra are of much rarer occurrence than the preceding. They are generally the result of some form of direct violence.

Bladder Extirpation. T. Rolsey[1] removes the bladder unopened, as a cystic tumor is shelled out. His incision is in the shape of an arc, with the convexity down. The adherent peritoneum is removed with the bladder if it cannot be readily detached. The ureters are divided with the cautery, between two ligatures, about 1 cm. above. In women the neck of the bladder is then loosened and 1 or 2 cm. of the urethra. The latter is then seized in a small angiotribe and severed back of it. In males the prostate and bladder must be loosened from the rectum before the urethra can be reached and divided above, a small forceps applied below. The entire bladder can thus be removed without hemorrhage. The peritoneum is sutured together again if it had to be opened. The cavity left by removal of the bladder is lined with a gauze veil and filled with strips of gauze brought out through the center of the wound. He moistens the gauze with a 1 or 2 per cent. solution of silver nitrate. A short incision is then made in the lumbar region on each side, extending from the margin of the erector spinæ outward. The ureter is then hooked up with the forefinger, close to the kidney, the lower part is cautiously loosened, and the whole brought out. In this way the ureters are brought out through the small incision about 8 cm. from the median line. Funnel-shaped retraction is liable to occur if the ureter is fastened directly to the skin. For this reason he does not fasten the ureter but leaves it hanging from the wound at symmetrical points on each side, enclosed in a glass vessel, after introducing a No. 12 rubber catheter in such a way that it just passes through the abdominal wall. The projecting part of the ureter is protected with a perforated rubber cot. The outer end of the exposed portion dries up and shrivels for 2 or 3 cm. By the end of the week, when the sutured wound has entirely healed, the necrotic end of the ureter is cut off, while the living part above is

(1) Zeit. f. klin. Chir., April, 1907.

left to project like a small beak-shaped urethra, standing out above the skin. It soon becomes coated on the outside with epidermis. After this the catheter is removed and the flow of urine is controlled with an ingenious apparatus, which consists of an elastic belt in which two silver plates are sewn, in the lumbar regions. Each plate has a round hole in the center in which fits a shallow silver cup with rubber on the edge, the cup extending below into a short tube connected by a rubber tube with the urinal below. Bands at the side of the belt pass under the thighs, and the belt buckles in front and laces behind. The rubber bag serving as the urinal is suspended just below the pubic bone. The silver cups are inserted from within the belt, and the pressure of the latter holds them tight against the skin. A woman of 34 has been wearing this belt for eleven months, day and night, and it has worked to perfection, with no leakage of urine. The advantages of the technic described are claimed to be that the bladder can be removed without danger of infiltration of urine or contamination with feces, and there is no danger of secondary infection, which is almost inevitable, he declares, when the ureters are implanted in the intestine or vagina.

Exfoliative Cystitis. According to J. F. Robinson,[1] this is generally associated with retroverted pregnant uterus and is usually manifest at the fourth month. Other causes are a retroverted myomatous uterus, pressure by a myoma choking the pelvis, retention of urine or the instillation of strong, irritating solutions. The common factor underlying all is ischemia produced by pressure, for cutting off or lessening of the vesical blood supply results in ischemic necrosis with or without infection. The caustic action of the ammoniacal urine in long-continued distention of the bladder may also play a part. Exfoliative cystitis usually is abrupt. The detached membrane may be extruded entire or in small pieces; the mucous surface may be so altered by the necrotic changes that it is recognizable with difficulty, and its surface is often studded with uric acid crystals. Adhering to it are often more or less extensive portions of the muscular coat, and in the worst cases the peritoneal coat is also involved. Prognosis is usually fa-

(1) Albany Med. Ann., January, 1907.

vorable except in those cases associated with sepsis. The treatment is usually that adopted for cystitis after correcting any displacements that may be present, and restoring the blood supply as nearly as possible to normal.

Bladder Rupture. E. Quick[1] reports the case of a man who sustained an intraperitoneal rupture of the bladder from a severe abdominal injury and subsequently suffered from anuria and a progressive abdominal distention. He was operated on 254 hours after the accident, and was discharged cured on the tenth day. The patient worked as a laborer an entire day after the accident, and was not compelled to take to bed until the second day was well advanced. Shock did not appear.

Suprapubic Cystotomy in Children. In a five months' old infant P. Mendes did suprapubic cystotomy for a vesical calculus. The child made an excellent recovery. The bladder, and in children all the tissues, possess so much vitality that the sutured wound heals exceptionally soon. The symptoms of the calculus in the infant were pain during urinating, evidenced by kicking, struggling and screaming, cloudiness of the urine, which contained quantities of phosphates. The abdomen was relaxed and not tender. The calculus was discovered under chloroform. It was extracted four days later under chloroform by suprapubic cystotomy.

Vesical Calculi Without Calculi Symptoms. This condition is reported by E. Fuller.[2] Where the bladder harbors residual urine and the calculus rests in a large chamber of such urine it is not liable to produce symptoms, as the calculus is not caught in the neck of the bladder and squeezed at the end of urination.

Congenital Urethral Stricture. C. Posner[3] reports a case of congenital urethral stricture in an 11-year-old boy who had always been healthy other than an attack of scarlatina. In August, 1906, he had pain around the right kidney, turbid urine tenesmus and once hematuria. The abdomen protruded and urine retention occurred. The catheter found a stricture which yielded to dilation with relief of urine retention. The symptoms described disappeared.

(1) Ann. d. Mal. d. Org. Gén.-Urin., Nov. 17, 1907.
(2) New York Med. Jour., April 27, 1907.
(3) Berlin klin. Woch., Nov. 13, 1907.

Seminal Pus Tube. This condition, according to W. T. Belfield,[1] is quite as frequent as Fallopian pus tube in the female. It is frequently not recognized, since pyuria, frequent and painful micturition and retention of urine that are common to it are found in other urinary conditions. Infections result from the gonococcus, pyogenic bacteria and the tubercle bacillus. When the seminal vesicle is invaded the complex of symptoms causes a diagnosis of prostatic abscess in most cases, while they are due to abscess of the seminal vesicles. Stricture of the bulbous urethra is usually mistaken for gonorrhea, although purely the result of pyogenic bacteria. In men over forty pus in the urine is ascribed to prostatic hypertropy. Belfield advises simple incision with a cautery knife from the rectum to relieve pus tubes. A still simpler operation, which can be done in the office, is that of opening the vas deferens, stitching the cut edges to the skin and injecting through a curved hypodermic needle any chosen solution. The liquid traverses the vas and ampulla and enters the seminal vesicle. Daily injections are made until the infection is over, when the fistula can be closed.

Scrotal Calculi. H. B. Oertel[2] describes the case of a 31-year-old man who for four months before coming under his care had pain in the scrotum, penis and adjacent parts. He had also been troubled with leaking of the urine from two false openings through the penis situated one inch and one and three-quarter inch, respectively, from the base. He had a syphilitic infection of eleven months standing. His general condition was fair, facial expression anxious, with normal temperature and exhilarated pulse. There was decided swelling of scrotum and penis, and pus exuding from the meatus and the two false openings. The parts were so tender as to make a thorough examination impossible. After three days' use of lead water and laudanum and codein, examination revealed the sharp edge of a hard substance at the extreme inferior border of the scrotum, just to the left of the median line. The incision was enlarged and a stone extracted. The pain increased and the pus exuded more freely. The next day the patient was anesthetized and three more calculi were removed. Collapse

(1) Med. Record, May 4, 1907.
(2) Jour. Am. Med. Assoc., Nov. 16, 1906.

under the anesthetic stopped the operation. The symptoms diminished in severity. Three days later the patient again was anesthetized and four more calculi removed. Two of these were in the same location as the first, and two, distinctly oval in shape, were removed from the inferior aspect of the base of the penis. After the operation the pain, swelling and suppuration materially decreased. Urine and pus continued leaking from the false openings. One week later another calculus was removed from the scrotum and the false openings were touched with pure phenol (carbolic acid). The following day the pain stopped. The swelling gradually subsided, the false openings healed in a few days, suppuration stopped, and one week thereafter patient was discharged. The calculi were decidedly adherent, necessitating being torn away. There was no involvement of the tunica vaginalis, as the testicles were not affected. Antisyphilitic treatment was continued and the patient had no further trouble. Seven of these calculi fit well together, forming an ovoid mass 12 cm. by 6 cm. (4⅝ by 2 5/16 inches) in circumference. The two calculi from the base of the penis fit together and measure 9 cm. by 5 cm (3½ by 2 inches) in circumference.

Cystin Calculi. These are reported by F. A. Southam[1] in two cases. In the first patient, a man of 32 years, the stone, which gave the usual symptoms and was easily detected by sounding the bladder, was removed by suprapubic lithotomy and the patient made a good recovery. The stone was one and three-quarters inches by one and a quarter inches in size, mushroom shaped, and was pale with an irregular crystalline surface. Cystin crystals had intermittently appeared with urine. In the second patient, a girl of twenty-two, the stone passed through the urethra, was of a pear-shape and one-third of an inch in length.

Seminal Vesiculotomy. Eugene Fuller[2] describes five cases in which sexual neurasthenia, mimicking hebephrenia, resulted from excessive coitus by boys between 11 and 14 into which they were seduced by mature women. The operation produced good results, but these mainly of a psychic character, hence neither the constitutional effects of the

(1) British Med. Jour., March 2, 1907.
(2) Amer. Jour. Derm., September, 1907.

MISCELLANEOUS

BY

HAROLD N. MOYER, M. D.

SECTION II

MISCELLANEOUS

Degeneracy. P. C. Smith[1] says that degeneracy is sometimes seen in an individual without apparent hereditary tendency after some infective disease or other cause of malnutrition, but it is usually congenital and hereditary.

ETIOLOGY. Some of the causes capable of originating this hereditary condition are known. Drunkenness on the part of a parent at the moment of generation, great difference of age in the two parents, disease, malnutrition or great excitement on the part of the mother during pregnancy, and disease during infancy, may all bring about the condition. So also, in all probability, may some form of chronic intoxication, or a permanently unhealthy condition, on the part of the parents prior to conception, or perhaps rather on the part of some more remote ancestor. All these conditions interfere with nutrition; so we are probably justified in asserting that the cause of degeneracy is always malnutrition, either on the part of the individual first affected during his fetal life or infancy, or on the part of one of his forefathers. Malnutrition has been present in all cases where the antecedents have been ascertained; experiments on the eggs and embryos of animals show it to be a *vera causa;* and, indeed, it is difficult to imagine any other cause.

Some biologists deny that faulty nutrition in the ancestors can produce degeneracy in the descendants, claiming that the germ plasm remains unaffected by the nutritive conditions of the body in which it exists and from which it must derive its nutrition. The evidence for this proposition has not been presented and there are strong

(1) Edinburgh Med. Jour., March, 1907.

arguments to the contrary. An easy life may originate degeneracy, not by interfering with natural selection but by leading to unhealthy modes of existence that impair the nutrition of the individual and through him that of his descendants. Degeneracy is found in all civilized nations and in all classes of society. It is probably favored by the overcrowding and insanitary conditions of some towns, but overcrowding alone is not sufficient to produce it. There are doubtless many factors and they vary in different countries and at different times. The degeneracy of one generation must be explained by the circumstances of the previous or some former generation. It is interesting to observe that degeneracy occurs not only among the very rich and the very poor but also among the middle classes. It would be important to find out the exact circumstances of the member of the family who first showed signs of degeneracy, but that unfortunately is difficult—ignorance of the nature of the condition, ignorance of family history, and unwillingness to confess to unpleasant truths, all combine to prevent successful investigation.

DISTRIBUTION. It will be well to inquire into the mode in which degeneracy is distributed in families. Here again we meet with the same difficulties, and it is impossible to make a definite statement at present. The following propositions are put forward tentatively and with much diffidence. They refer to Group 4 only, my acquaintance with Group 3 being insufficient for me to venture on any formulæ with regard to its distribution:

1. If a degenerate marries a non-degenerate, all or most of the offspring will be degenerate, the proportion of affected children being much in excess of what would be expected according to accepted theories of heredity. If the unaffected partner be very healthy, the children may on the whole be less affected than the degenerate parent; and thus a series of marriages into strong stocks may prolong a degenerate family, and probably even eradicate the degeneracy in time.

2. The union of degenerate with degenerate produces offspring more strongly affected than does the marriage of degenerate and non-degenerate.

3. It occasionally happens that in a family of brothers

and sisters some show signs of degeneracy and others do not.

4. The union of an apparently unaffected member of a degenerate family with a non-degenerate may produce degenerate offspring.

5. Males are more often affected than females.

6. The condition is more readily transmitted by males than by females.

7. Degenerates may have large families; nevertheless degenerate stocks tend to die out, partly from the diseases to which they are liable and partly from diminution in sexual power.

On the whole, we seem justified in saying that a degenerate family is one whose members present losses of racial characteristics, and that these losses cannot strictly be described as inherited, seeing that they vary in successive generations and in different members of the same generation. In those cases in which degeneracy is due to ancestral malnutrition, the dissolution of heredity is no doubt prior to other manifestations; but when degeneracy results from disease in intrauterin life or infancy, the other faults of development must arise simultaneously with that which causes loss of power to transmit fully the characteristics of the race.

Degeneracy may be defined as a state of imperfect development, originating probably in malnutrition on the part of an ancestor or of the individual during the period of growth, affecting many or all the bodily systems and functions, and always involving a dissolution of heredity.

Degenerates exhibit an inferior resistance to some of the infections and the neuroses, neurasthenia, epilepsy, hysteria, and most psychoses may be regarded as manifestations of degeneracy.

It is possible that the special liability to phthisis occurs only in those degenerates whose anatomic stigmata include thoracic malformations or hypoplasia of the pulmonary or other vessels; but there is some evidence in favor of the theory that degenerates are peculiarly liable to all forms of tuberculosis. It is said that those whose secretion of suprarenal extract is deficient (and the tone of whose arteries is consequently low) are more liable than others to tubercle.

Arterio-sclerosis and Bright's disease, when they occur in these cases, are probably due to irregular flushings and contractions of vessels that may be congenitally imperfect, to toxic agencies arising from the faulty metabolism that is usually present, and perhaps to further toxins produced during the frequent periods of mental stress. We have already seen that albuminuria and tube-casts sometimes occur as transitory phenomena in some of the insane and neurasthenic. If heart disease really be more common in degenerates, as seems not improbable, we have possible explanations in imperfect structure, in toxins, and in the action of the heart of frequent fits of excitement. Some degenerates die of suicide, and it occasionally happens that one perishes at the hands of the executioner.

DIAGNOSIS. The only question of importance under this head is the differential diagnosis of insanity and the forms of degeneracy classified as Group 3 above. Indeed, two of these forms—moral insanity and volitional insanity—have been classified by the Medico-Psychological Association as true insanity, which in that case will not necessarily connote intellectual obfuscation among other things. If the term insanity is used to denote all cases in which there is failure of one or more of the mental faculties, not due to the direct action of toxic agencies, then its scope will be very wide indeed, including even those who have no ear for music. Perhaps, however, the word is used practically rather than scientifically, signifying mental failure of such a nature as to render the patient dangerous to himself or others, or incapable of managing himself or his affairs. But from the medico-legal point of view, it certainly seems desirable to make a distinction between those with clouding of the intellect and those who are merely subject to morbid impulses; the effect of punishment is different in the two cases. Perhaps medical men would agree to this distinction more readily if lawyers for their part would admit a condition of "diminished responsibility" in those who, as the result of developmental defect, have stronger impulses and weaker resisting influences (instinct, ingrained habits, will) than normal persons. Even to those who hold that intellectual derangement is a necessary condition of insanity the diagnosis between insanity and degeneracy is not always easy. A full

examination of all the mental faculties must be made in each case. A degenerate will sometimes surround himself with a fence of sullenness and reserve, but by the exercise of some tact this may usually be broken down, and his confidence gained, and the observer will then find him sensible, and succeed in making him judge his own actions reasonably.

It should be said that some authors hold that there is always a certain degree of intellectual defect in moral and volitional insanity, though it may be difficult to find. This doubtless is so, for mental deficiency in one direction must react on all the processes of the mind; but is the intellectual failure in these cases much more than is present in many sane and non-degenerate persons, whose lack of education, or whose education along faulty lines, has left them with imperfect perceptive powers and confused conceptions of things and their relations? There is a steady slope from perfect sanity to insanity, but most of the intermediate positions are merely temporary states, and it is easy to divide men by certain broad lines. Such a division will probably result as follows: those who, to all intents and purposes, are of perfectly sound mind; the neurotic; the more marked degenerates (Group 3); the insane.

TREATMENT. Degeneracy may be eradicated from the race. It may also be eradicated from the family by a series of marriages into robust families, though the wisdom of sacrificing these is doubtful; moreover, degenerates have a tendency to marry one another—*les névrotiques se recherchent.* It is highly improbable that it can ever be eradicated from the individual. Possibly, however, means may hereafter be found to ameliorate the condition by the use of multiple extracts of glands or other physiologico-chemical medicaments; and even at present a degenerate may be so trained that the various neuroses and psychoses and other disorders to which he is liable shall be less likely to supervene. No doubt the power of education is, as has been said, inferior to that of heredity; but it may reasonably be supposed that the degree of inferiority has been exaggerated, for education has never had fair play. Has any man ever been systematically educated, in the full sense of the word, from his birth onwards?

Prophylactic Treatment of Degeneracy in the Race. Dr. Archdall Reid maintains that the preventive of degeneracy hitherto has been natural selection, or the elimination of the unfit, a condition that is found only when life is strenuous. This is true, but it may be hoped that, as mankind becomes more civilized, there will be a more deliberate form of selection in accordance with Mr. Galton's science of eugenics, a science that will show the undesirability of the marriage of degenerates. Doubtless it will be long before this acts to any considerable extent; but the path of evolution seems to run rather in this direction than in that of Dr. Reid. We may also hope that the causes of degeneracy will to a great extent disappear in time; there will then be few new cases, and the already affected families will follow their natural progress to extinction.

Prophylactic Treatment of Complications in the Individual. This consists in a thorough and systematic education from the hour of birth. The body must be made as healthy and vigorous as possible; good habits must be ingrained from the very outset, so as to become the true reflexes, and every mental faculty must be developed. There are some points with reference to the education of the neurotic. It must be remembered that metabolism is defective in these cases, and every care must be taken to maintain a sufficiency of nutrition, including oxygenation, and of warmth, sleep and exercise. The child should be as much as possible in the open air, and the ventilation of the living and sleeping rooms should be thorough. The diet should not be confined to milk and crackers or rice pudding, but the natural cravings of the child should be respected.

The cold douche is much praised and is certainly very important when it can be borne, but there are some neurotic children who cannot tolerate even the mildest form of it. Its effects should be carefully watched. Free play is the only form of exercise that is suitable, in most cases, to these children while they are very young. It is most important to avoid fatiguing any child, or allowing him to fatigue himself. Fatigue may do serious harm. Frequent periods of recreation should be allowed.

The children should be encouraged to activity and not

allowed to dawdle, but should be closely watched, and on the slightest symptom of fatigue showing itself should be made to rest; a few words to them now and then while they are lying down may prevent their minds from straying in undesirable directions.

Education of the senses is particularly needed in degeneracy, as hysteria and some forms of insanity consist largely in narrowing of the field of consciousness, with the result that the mind is too much governed by organic sensations; in a less degree this produces brooding. It has already been shown that consciousness varies greatly in different individuals, and the best means of developing it seem to be, first, cultivation of sensory acuity and of observation, and, secondly, formation of the habit of causing sensory stimuli to be followed by appropriate action rather than to spend themselves in diffuse emotional movements. Education of the senses is also of use in improving the nutrition of the nerve cells and promoting the growth of association fibers. Two practical points must be mentioned: First, that sensory excitations soon tire children and should not be pushed too far; and, secondly, that all the senses should be developed. Owing to the complex associations of the nervous system, anything that appeals to several senses will have far wider relations than if it acts on one sense only, and the perception and recollection of it will be correspondingly clearer. It has even been held that a cause of the want of mutual comprehension between philosophic writers of different schools is the fact that one school prefers sense-images of one mode (*e. g.* tactual or visual), and another prefers those of a different mode; and that relations conceivable in the terms of one mode often fail to be conceivable in terms of another. It is more than possible that there would be a general rise of intellectual power if we ceased to neglect certain of our senses as we do at present.

The importance of a motor education must also be insisted on. To allow sensory stimuli to result in diffuse emotional movement rather than in prompt and appropriate action is as bad as to permit the senses to remain half-developed and to throw the child back on his organic sensations. It leads to a narrowing of the field of consciousness, to emotionalism, and to day-dreaming; it leaves parts

of the central nervous system undeveloped; it results in perpetual inability to perform certain complex actions which must be learned during the plastic age; and it leaves the will weak and the individual inefficient not only in emergencies but also in the ordinary affairs of life. To be possessed of all-round physical dexterity is to feel a sense of mastery that brings with it a greater love for action, and renders one more prompt and energetic. A motor education is an education of the will. To attain this it is not enough to check "extra movements"; activity must be encouraged, and coördination must be carefully trained. The effect of well coördinated movements of small parts (as the fingers) on the development of the intellect need only be referred to here.

It may be pointed out that a well-directed sensori-motor education increases the happiness of life, and that happiness is not only desirable in itself but is an important educational agent; it improves the nutrition of the nervous system, stimulates the mental faculties, elevates the emotions, and causes the individual to be less self-centered and a better member of society. Marshall has shown that "all pleasure is the coincident of surplus-stored force, and that all pain is the coincident of organic conditions which imply that the energy of reaction is less than that which should be expected to result from the stimulus reaching the organs whose action determines the mental elements in each case." If we substitute the words "happiness" and "depression" for "pleasure" and "pain," this is probably true.

Now the unfortunate subjects with whom we are dealing suffer from chronic fatigue of probably all the nerve centers, and accordingly we find that, even if pleasures strew their path, there is an undertone of unhappiness in their lives. To the healthy man the very process of living is pleasurable; it is not so with these. This cannot be entirely prevented, but the unhappiness can be lessened by improving the nutrition of the nerve centers, and such improvement may be effected by well-regulated exercise of those centers. Moreover, a satisfactory education will give more mastery in dealing with the many little cares and difficulties of life, and so will prevent much worry and depression. It is the day-dreamer, the brooder, and the

sentimentalist who worry; the sensori-motor individual acts. A potent factor of happiness is the power to roll away distressing thoughts from the mind. This is one aspect of attention, which should, of course, be inculcated.

Ideals should always be cultivated, and good habits, moral qualities, and the laws of morality are best ingrained by making them into ideals. Among the things thus instilled may perhaps be included certain aims that are specially or solely desirable for the subjects of whom we are treating. First of these comes celibacy, and after it perhaps abstinence from such drugs as alcohol and tobacco. The question of alcohol is difficult, however; neurotics can often get more out of their lives by a sparing use of it, but, on the other hand, they are frequently liable to take it to excess. As to celibacy, there is no doubt. Neurotics should not marry, chiefly for mankind's sake, but also for their own. Those who are not suited to family life usually find family life not suited to them. Many neurotics are refined, ardent and high-minded, with much intellectual ability and moral fervor; and many more might become so if suitably brought up. Monasteries are excellent institutions for such as these, and it would be well if all who are capable of good work but who are unfitted for the struggle of existence could find a refuge where they might lead a peaceable and useful life, and one that would stimulate their higher faculties, always under guidance, and with the strict condition of celibacy.

It would be well if the subject of degeneracy were studied by schoolmasters, as it is impossible to educate such subjects properly without understanding their weakness, need of sleep, defects, impulsiveness, excitability, amenability to suggestion, sensitiveness and peculiar dangers. It would be well also if the subject were studied by jurists and by criminal lawyers.

The Physical and Evolutionary Basis of Marriage. The perpetuation of a custom, says Bayard Holmes,[1] is dependent on the ordinary laws of evolution. Marriage as a union of the sexes and the basis of the family, the primary unit of society, is perpetuated by the action of both physical and psychic factors. He considers one of these phy-

(1) Jour. Am. Med. Assoc., Dec. 8, 1906.

sical factors only, the influence of the venereal diseases in initiating and perpetuating monogamy.

The two great venereal diseases, syphilis and gonorrhea, are well recognized as producing sterility or at least diminishing fertility. These diseases are ever contagious and generally spread through the sexual act. The sexual union of adolescents is never attended by gonorrhea and only by inherited syphilis when one of the parties was previously infected. Such a healthy union is not prolific. After venereal disease has been acquired by either party the fertility of both is likely to be diminished.

In the earliest stages of society the perpetuation of any tribe or family was largely a matter of numbers and strength at arms. Each little group was at war with every other group, and self-preservation and conquest were matters of endurance and constantly appearing fresh, young warriors. The struggle was a continuous struggle and was taken up by each succeeding generation. Success depended, then, on an unbroken stream of healthy progeny. This was possible when the fecundity of the tribe was undiminished by venereal diseases, a condition secured through monogamous customs, while less fertility weakened their polygamous adversaries.

Thus the presence or absence of venereal disease determined the numbers of warriors in any tribe, and this, in turn, determined that tribe's success in war. Success in war carried not only the yoke of power but the yoke of custom. And this monogamy has become the custom of all successful and all conquering people. It probably originated spontaneously in many places and at many different periods. It is an ever-acting factor and will ever be in such proportion as these diseases are uncontrollable. This physical limitation of the sexual relation is mindful only of fertility. It does not secure the survival of the best, the highest or, considering changing conditions, the fittest.

Other physical factors have acted with this one, but this one was early and has been and probably will be ever acting. Many social and psychic, even religious, legal or economic factors have been called into play to support monogamy, but sterility as the result of venereal infection was doubtless the earliest and will ever be the most

potent factor in the perpetuation of monogamy. It will act unconsciously and be attended by immeasurable errors and hardships. It will rarely be recognized in its true significance. Like many other factors in the evolution of human life, it is susceptible of artificial guidance or restraint. Such interference, however, is temporary, local and transient.

Patent and Proprietary Medicines. Perhaps no subject in medicine has occasioned more animated, sometimes bitter, discussion than the relations of the medical profession to the manufacture and sale of secret, proprietary and patent medicines. The patenting of processes of chemical manufacture has become almost a necessity to secure the fruits of labor in the discovery and perfection of methods of producing new remedies, especially the so-called synthetic chemicals. That when a process does not offer enough of novelty to secure the protection of the patent laws it is profitable to keep it secret is readily seen, and this has led to the adoption of trade names having no significant relation to the product sold under them which have been used by manufacturers to secure to themselves certain advantages over their competitors. Under these trade names manufacturers address themselves first to the medical profession, explaining more or less explicitly the uses of their preparations but keeping secret the details of the process and formula in order to stifle the competition of the rival manufacturer and also of the pharmacist who is usually in a position to prepare an equally effective and elegant preparation at a trifle of the cost.

The proprietary manufacturer is ready, as a rule, to resort to putting his wares before the public as soon as it will pay him to do so, and the fact that certain reputable drug manufacturers put up under other names inferior goods and preparations and make for the quacks and fakers much of the so-called "patent medicine" is evidence that there is no principle of ethics deterring these manufacturers from entering on the field of "patent medicines" or nostrums. The so-called "patent medicines" are not patent in a legal or scientific sense, but are merely secret remedies, frequently sold under a trade name. The trade name is also used to continue proprietorship in medicines which have had the protection of a patent but whose term of pro-

tection has expired. An example of such medicines is urotropin, which is the official hexamethylenamine sold under the especial name urotropin. The manufacturer endeavors to fix on the substance over which he holds a patent a fancy name, which will be attached to it after the expiration of the patent and by which the sale of it may still be controlled.

In this way the manufacturers of tabloids have been enabled to continue a proprietary right in an article the patent right to make which has expired. Any person has now the right in England to make the articles called tabloids, but he has no right to call them by that name. The competition in the sale of proprietary remedies has led manufacturers to use all the resources of modern advertising to advance their sale, and in order to do this they have been led to overstate their powers for good and to conceal their powers for evil. The characteristic exaggeration of the patent medicine advertisement, the use of false testimonials, and reports of cases having no proper relation to the remedy used, and the shameless attempt to convince people that they are victims of all manner of diseases for which the remedy is a certain cure are well known. A similar phenomenon has been observed in the advertisements of the manufacturers of proprietaries to the medical profession and a sort of pseudo-scientific literature has been created that is the disgrace of medicine.

While it may be admitted that proprietary remedies are necessary at certain stages of progress and that they may have their uses even at the present day, the evils connected with the business are also manifest. These may be briefly classified as follows: The sale of worthless remedies or the sale of common remedies at a price out of all proportion to the cost. The prevention of the application of the proper remedy and hence of the cure of the disease. The sale of injurious remedies, especially such as tend to make a market for themselves because they contain habit forming drugs. It may be said that the tendency of the sale of proprietaries is to rob the doctor of his patient, to prevent the cure of maladies, to hinder the progress of medical science, and to favor intemperance and the use of narcotics.

These evils have brought about more or less concerted efforts on the part of society and the medical profession

to oppose them. The legal restrictions on the patent medicine trade are very various in different countries. *England* has no law against patent or proprietary medicines as such. There is a tax which amounts to a considerable reduction of profits and has probably been the occasion of the disappearance of several firms from the English markets, but no perceptible diminution in the trade has been brought about thereby. Medicines which contain alcohol are also required to pay the excise tax. The use of trade names is restricted by a decision that if a name has been attached to a patented product it becomes common property on the expiration of the patent.

In *France* the law requires the disclosure of the formula of every preparation sold as a specialty either on the records of a pharmacist as a physician's prescription, or in the bulletin of the Academy of Medicine, or in a list kept by the minister of agriculture. The law has not been strictly enforced, but tends to diminish the amount of secret remedies sold.

In *Germany* no remedy can be advertised and sold without the consent of the government and the authorities may and often do warn the people against certain remedies as worthless.

In *Austria* no secret remedies are allowed to be sold without the permission of the board of health, and the regulations are well enforced.

In the *United States* a somewhat anomalous condition exists in consequence of the differing jurisdiction of the states and the general government. The new federal Food and Drugs Act aims to accomplish two things: 1. To require publicity so far as a certain class of remedies, viz., the habit forming drugs, is concerned, the presence and amount of which must be stated on the label. 2. To ensure the absence of misrepresentations in labeling and advertising. A remedy may no longer be labeled a sure cure for consumption or called Dr. Koch's remedy unless Dr. Koch has had something to do with it. This law of course applies only to interstate commerce, but it is probable that it will soon be supplemented by state laws in close agreement with it. Many of the states have passed, or are about to pass, laws which forbid the sale of certain drugs such as

cocain and other narcotics without the physician's prescription.

In *Australia* and especially in *New Zealand* legislation has taken a course especially unfavorable to secret remedies. It has been proposed to exclude such remedies from commerce unless the formula is disclosed. The proposition has greatly agitated the proprietary medicine trade of Great Britain and probably some compromise will be effected.

C. H. Williams[1] considers some legal phases of the question. A purchaser who has been defrauded in the purchase of a worthless remedy may recover the money lost. A guarantee given by the seller or proprietor is seldom worded so as to create any liability or is so hedged about with conditions as to afford a loophole of escape. The difficulty of proof that the remedy has actually produced death or damage to health is usually sufficient to prevent recovery in a suit against the manufacturer. Williams says:

"So far as any of the legal remedies mentioned are concerned, it seems useless to expect from them any adequate relief, nor is it possible to formulate any law which can have any great general effect, if its application is limited to the correction of the mischief or the punishment of the offender, after the damage is done. The only practical line along which effective work can be done is along the line of limitation of the sale of remedies, demonstrated to be worthless or injurious, by means which will protect the public from the imposition of the fraud and the possibility of injury from their use.

"Let the definition of non-mailable matter be extended to include newspapers and publications containing advertisements of articles which are being publicly advertised, through the mails, by means of false pretenses, representations or promises, or which from their nature are injurious to the life or health of the public. Give to the postoffice department, on its appearing that an article is being so advertised, or that the article advertised is of such harmful nature, the power to make a ruling that any publication containing an advertisement of such article shall be denied

(1) Jour. Am. Med. Assoc., March 9, 1907.

the use of the mails, appropriate penalties being provided for any violation of the law.

"Make the rulings of the department subject to review by the courts, and afford to persons against whom the rulings may be directed proper safeguards to guard against injury from the improper exercise of such power. Proper provision should also be made for the publication of such rulings in such manner as will give adequate notice thereof to publishers before the imposition of any penalty."

Professional Confidences E. S. McKee[1] cites the following decisions and cases illustrating some of the phases of professional secrets. One of remarkable rarity occurred recently in England. A chauffeur was taken ill, went to a public institution for treatment, and there came under the medical care of his employer, who was in service on the staff of the institution. The doctor found the patient suffering from aortic disease which rendered him a fit subject for sudden death at any time. The physician betrayed the professional secret to his business self and on the chauffeur's recovery told him of his condition and said he did not wish to risk his neck with a man in his condition, gave him two weeks' wages and discharged him. With the aid of an unoccupied attorney, the chauffeur brought into court the question whether the employer coming into possession of information in his professional capacity, might use this information to determine his actions in a business capacity to the detriment of the employé. Was it, as alleged, a shameful abuse of a privileged communication? Was it the duty of the employer as a physician to continue to ride with the chauffeur, keeping inviolate his professional secret, until the aortic lesion resulted in a broken neck for the medical man, at which time it would be perfectly proper for him to discharge the chauffeur for incapacity? The court, however, took a very common sense view of the subject and rendered a decision in favor of the medical man.

An interesting decision of fundamental importance was rendered recently in the high court of justice in Leipsic, Germany. A woman had contracted syphilis from a man and after his death sued to recover damages from his heirs.

(1) New York Med. Jour., May 4, 1907.

The medical attendant of the deceased was summoned to testify, but declined on the ground that the law imposes silence on medical men in regard to the ailments of their patients. The plaintiff's counsel made a vigorous plea that the law of secrecy was no longer binding after the patient's death. The court ruled that only the patient himself was competent to release his medical attendant from the obligation of secrecy and since he had not done so before death it was fair to presume that he did not wish to do so. Surely death should but render more sacred the confidence placed in the physician by his patient.

The following resolution was presented and passed at the Paris Academy of Medicine: "A radiograph is a document consisting of something taken directly from the patient, is something of the personality of the patient; and therefore the use of a radiograph comes under the law of professional secrecy in its strictest sense. Take for example a case of early phthisis, or one of syphilitic exostoses, examined by a man outside of the medical profession who is not bound to professional secrecy. It is the sense of the Academy, as indeed it must be of the whole profession, that *x*-ray pictures should not be taken except by the medical profession." There is an effort being made to prevent the practice of radiotherapy in Paris by any but the medical profession.

The law on privileged communications is that the doctor, lawyer, or minister cannot be compelled to testify in court, or elsewhere, what professional knowledge he has obtained about his patient, client, or parishioner, unless he or she wishes him to do so. Following are some of the many puzzling cases which have come before the writer in his experience:

Case 1. A near neighbor, a delightful friend, a good patient, died while we were together one evening quite unexpectedly. He had been suffering from a slight ailment and I was with him till he should go to sleep. When comparatively comfortable and in conversation he, without a moment's warning, dropped dead. His old mother, whose only child he was, gave way to the most uncontrollable grief. There was no one else to blame, so she blamed me and did it good and strong. Her brother, a physician, a good friend of mine, incensed at her persistent and pro-

longed abuse of me, told her that her darling boy had contracted syphilis thirty years ago which had caused his arteries to be friable and was the cause of the cerebral hemorrhage which had caused his death. This of course enraged her very much and she did not again visit her brother till he was on his death bed. I think the doctor did wrong. No amount of abuse of me should have led him to tell his sister that her idolized son had had the syphilis and thus pile sorrow upon sorrow.

Case 2. A husband employed the physician to treat the wife and confessed that he had given her gonorrhea. The question of privilege was raised in a trial for divorce. The argument was made that the wife was the patient and that the privilege was waived by her and hence the physician was not bound to secrecy as to the communication made by the husband. It was decided that the physician must testify.

Case 3. In this case both husband and wife had employed the physician and he was not compelled to testify, as both had been his patients.

Case 4. A poor girl at a clinic forbade the doctor to tell what was the matter with her to the students, as she was personally acquainted with some of them. Her rights had to be respected as much as if she were rich.

Case 5. This is one in which the physician had reason to suppose that a young woman had been impregnated by one lover and had caught gonorrhea from another. The author speculates on the questions whether he ought to tell her her real condition, whether he ought to tell her mother, whether he ought to tell her lover. He forebore to do either and in due time after she had been relieved of the fetus by self-induced abortion, and of the gonorrhea by treatment, the couple were legally married.

Specialism. In an address on specialism J. Price[1] expresses the view that while the specialist in the great cities is necessary and important there will be a movement to establish hospitals in all the smaller cities so that no town of 2,000 inhabitants will be without its hospital and well trained men to carry on the work. Most of the work of surgery will be done in these small places. The

(1) Illinois Med. Jour., January, 1907.

work of the specialists in the great centers will then be educational. They must educate surgeons by the object lessons which they present in their clinics and still more by taking young men as apprentices who shall thus be fitted for efficient, independent work.

Some Causes of Inefficiency in Medical Practice. John B. Roberts[1] enumerates the following as some of the causes of inefficiency:

Lack of Equipment for Prompt Service. The physician anxious to serve his patient should see that he always has a clinical thermometer, a hypodermic syringe, a lead pencil, a pocket case of instruments, and a few powerful medicinal tablets with him.

Carelessness in Observation. Many mistakes in diagnosis and treatment are attributable to hurried and careless examination. An efficient practitioner must watch not only the symptoms of the patient, but the actions and records of the nurse and family. He must ever be keen-eyed, open-eared, and wide-awake; even then some important detail may occasionally escape his notice. Doctors, therefore, can not afford to have their intellectual acuity blunted by beer, tobacco, or unnecessary loss of sleep; for a successful medical career demands accuracy and eternal vigilance.

Indefiniteness in Giving Orders. Attendants on the sick should be given directions as to medication, diet, and hygiene, with definiteness and clearness. Much harm has often occurred from misunderstood or indefinite orders and carelessly written prescriptions. To kill a man by bursting his intestine with a large enema given by hydrostatic pressure from a high level is a professional tragedy which may occur from lack of definite instructions to a subordinate.

Want of Self-Confidence and Test. Repose, as of conscious power, and the modest but confident voice of self-reliance are mighty aids to successful control of the sick. Many men with medical knowledge fail to be successful practitioners because they have not the bearing of effectiveness.

Failure to Appreciate the Value of Common Remedies. Clean air, clean water, clean food, and sound sleep, though

(1) St. Louis Med. Rev., Nov. 24, 1906.

the cheapest of all remedies, are the most neglected. It has taken many years to teach doctors and laymen that even tuberculosis of the lungs may be cured by these agencies. Many other affections are much alleviated and even cured by their employment. Several hours in the open air may conquer a restlessness that bromids and other nervines do not abate. Loss of sleep usually delays convalescence more than is usually recognized.

Insufficient Doses of Medicine. Nothing seems so fatuous as playing with drugs in insufficient doses. When one desires to divide skin or muscle one needs a knife that will cut. So also, when it is desired to attain a given object by medicine, a sufficient dose to produce the desired effect should be given.

The success of certain nostrums undoubtedly depends on the fact that physicians accustomed to using official remedies in insufficient doses without securing any definite result have given a secret preparation which contained a sufficient dose of the same remedy and having observed the desired effect have become converts to the use of the nostrum. The guiding principles of the physician should be no drugs and no surgery unless necessary; when necessary, effective drugs and effective surgery.

The Teaching of Medicine in Edinburgh. It is impossible to consider this subject, says the *Scottish Medical and Surgical Journal*,[1] without saying a word or two as to the teaching of the sciences, such as chemistry, anatomy, and physiology, which lead up to the teaching of medicine. The physician cannot, of course, be present at the training of the students in these sciences, he can only judge of the results as he sees them when the student comes to apply his knowledge at the bedside. Speaking broadly, one must gather from this test that the tendency of the purely scientific teachers is to teach their subjects too much as pure sciences, and not to bear in mind sufficiently the relation of the scientific facts to the use which is ultimately to be made of them by the man who is learning them. Take anatomy, for example. Everyone will grant that it is impossible for the student to be taught too much anatomy. Details of nerve supply, of muscular insertion, of vascular

(1) November, 1906.

anastomosis and so on, which appear uninteresting enough, may at any moment become of vital importance, to a surgeon in particular. But from the physician's point of view the most constantly important part of anatomy is the relation which organs bear to the surface, and one hardly ever finds that students have more than the vaguest ideas about this. They will give you the course and branches of the sciatic nerve, but they cannot put in the outline of the stomach with a paint-brush. It may be said that it is the duty of the physician to teach them this, but with the constant refinement of diagnosis that is going on, the physician has little enough time to overtake his own work without having to supply the omissions of someone else.

It is maddening to get well under way in a clinic on a case of enlargement of the liver, and then to find that some of the men to whom one is talking do not know the size and shape of the normal organ. In the same sort of way there are some parts of physiologic teaching which are of importance to the study of medicine, others which are not. Histology must be taught minutely, for it is impossible to form an accurate mental picture of pathologic processes unless the normal structure of organs is thoroughly familiar, and no one can become a competent clinical microscopist without thorough histologic knowledge. On the other hand, many of the results of experimental physiology are not of primary importance, and it seems a pity to waste the time of the heavily-burdened student by making him learn them, or repeat them experimentally for himself —except in so far as the experiments may give him neatness of manipulation. The broad facts of the great functions of the body, which are all that most practitioners ultimately keep in their minds, are apt to be lost sight of in the multiplicity of detail.

It is suggested the course be arranged so that instead of each professor covering the whole field of medicine he may lecture on those subjects in which he is especially interested and for which he is especially qualified, these various special lectures being coördinated to form a complete course covering all the subjects necessary for the student to familiarize himself with. The students should learn not only how to treat disease but also how to treat

patients, and the dispensaries afford opportunities for the exercise of tactful consideration.

One other point may be mentioned, and that is the want of teaching of medical ethics, for students are sent out with no notion other than what they can pick up from casual talk, of the relation of practitioners to one another, to consultants, and to the general public. What wonder, then, if young men in a hurry undersell, allow themselves to be sweated by clubs, and do all those things which move their brethren to wrath? The wonder is rather that under the stern push of necessity the young men keep so straight as they do. A few lectures on all these points, given by the man most competent to deal with them, would not only lesson the labors of the General Medical Council, but might sweeten professional life, and prevent the petty jealousies that sap half the usefulness of the profession.

Teaching Functional Pathology. H. Emerson[1] suggests a course in experimental demonstration of changes in function produced by disease to supplement the usual courses in pathology which gives ideas of pathology mainly from the point of view of morbid anatomy, but give little information concerning the relation of disease to the functions of the body. While it is with function that clinical observation is almost entirely concerned little is done by clinical teachers to give precise notions of the relations between the pathologic changes and the symptoms manifested. The author arranged a course of eighteen lessons in this subject which was carried out by observations on blood pressure in man and experimental work on dogs and cats showing the relations of the blood pressure and imitating various diseases with an examination of the symptoms and verification of the ordinary physical signs. The diseases thus investigated included aortic stenosis and regurgitation, pericarditis, myocarditis, pleurisy, pneumothorax, hydroperitoneum, and the effect of various procedures on the pulse, blood pressure, renal secretion, etc. Such a course ought to form a valuable addition to the usual instruction in these subjects.

The Medical College Hospital. St. John Roosa[2] admits

(1) New York Med. Jour., April 20, 1907.
(2) Med. Record, Dec. 1, 1906.

that hospitals connected with medical schools "are to all intents not primarily places for the healing of the sick, but are subsidiary instruments for medical education and clinical instruction," but it is quite incorrect to say that "of necessity such hospitals must first consult the interests of the student-body rather than that of the indigent sick." It is the contention of those who maintain hospitals for teaching purposes, that the interests of the patient and of the student observing the cases with the teachers, are one and the same, that no kind of antagonism exists between them, and that the hospitals are the very best for the sick that can possibly be organized and maintained. It is almost impossible that any continued abuse, such as maltreatment or neglect, or any unkindness, would be allowed to obtain in a teaching hospital, for it is under the supervision, not only of the physicians in charge, but also of the doctors and students of medicine who frequent its wards. One may suppose that such hospitals favor commercialism, rather than humanitarianism, but this is an incorrect conception of the character and conduct of those who attend such hospitals. The history of attending physicians and surgeons of teaching hospitals in this country shows that in all the characteristics of a high standard in ethics, and in their general reputation for liberality and tenderness of heart, they are not inferior to their brother practitioners. The history in this new country of such institutions shows that the most charitable men in the profession are those who not only give their services to the poor, but who, as in some institutions, at least, give their services in lecturing absolutely without fee, and also contribute to the maintenance of the institution by individual subscriptions. The suffering poor of this city, whether properly or improperly, whether rightly or wrongly, know that they are tenderly treated in the hospitals connected with medical schools, and cheerfully enter them. It will be a bad day for the charity of New York and Philadelphia, as well as for their medical renown and usefulness diffused over the whole nation, if hospitals connected with medical schools do not continue to receive the support of the intelligent and charitable givers of our city, as well as aid from the city or state. Those who are active in maintaining them will never apologize for their efforts to convince both

sources of their worthiness.

Aims and Requirements of Medical Education. In his inaugural address on the aims and requirements of a medical education D. Noel Patton[1] remarks that:

Obviously the first question which must be considered is what we desire our medical graduates to be, what kind of men do we wish to turn out? The medical profession, in its widest sense, is a great organization to increase the well-being of mankind, and to combat disease. In the future, the prevention of disease, rather than its cure, must be the primary object of the members of the medical profession.

How is disease to be prevented? Why are we not more successful in doing so? The answer is simple. It is want of knowledge which hinders us. All our forward steps have followed and been based on increase in our knowledge of the nature of disease and of the laws which govern the healthy action of the body and its reactions to disease. The usefulness of an accurate knowledge of the cause of disease in preventing its spread is illustrated by the experience with cholera and diphtheria. The public must recognize that, if it is to have the benefits of this knowledge, it must take what part it can in gaining it. And, first, it must appreciate the fact that this knowledge, which is required to mitigate its miseries from disease, can only be acquired by investigation by an army of enthusiastic and devoted workers. The public must not only give *material* support to men who are devoting themselves to its service in the attempt to gain the knowledge required for the prevention of disease; it must also give them its *moral* support.

The public should also provide well-equipped laboratories for carrying on experimental investigations. While it is the duty of the public, in their own interest, to foster research by endowment and loyal support, it is the business of the universities to train investigators who are competent to gain the knowledge which is necessary for the prevention of disease. The universities must therefore strive to cultivate in those who are to take their place in the army for the prevention of disease these qualities—curiosity, scepticism in its true sense, the power of weighing

(1) Scottish Med. and Surg. Jour., November, 1906.

evidence, the power of observation, imagination, and, most important of all, perseverance.

If our scholars can add to these the power of persuasion and tact, they may not only be able to advance knowledge, which is their primary duty, but to have the further satisfaction of persuading the public to use that knowledge for the benefit of mankind.

But it is useless for the teacher merely to place before himself these heights to which his students are to be raised. How is he to raise them? Only by example; only by bringing the student into close relationship with men engaged in original scientific work, with men constantly exercising these faculties which he has to cultivate, with men taking their part in the advancement of knowledge. Thus only will the student receive real help in the attainment of the ability himself to take part in the advance. Hence the great importance of having active research work going on in every teaching department.

So far the first and highest duty of the medical profession—the prevention of disease—has been considered. But our knowledge is yet far too slender to enable us always to prevent the attack. We have, therefore, to meet the enemy when he has made his advance and to attempt to rout him, or at least to mitigate his ravages. Before any attempt is made to cure the disease, a clear, definite diagnosis must be arrived at. What is wrong, and why it is wrong, must be determined.

In order to train men for such investigations their power of observation should be cultivated, not merely through their eyes, but through their other senses as well; their power of collecting and weighing the observations they have made should also be cultivated and of deducing from them a clear picture of the condition, and above all cultivate a determined perseverance, which refuses to yield to difficulties, and which will carry them on till the truth lies exposed before them.

In fact, to *fight* disease successfully, we need to develop just those qualities which are required to gain the knowledge necessary for its prevention. The ideal doctor is thus a man of large, generous nature and of wide culture, possessed of a real love of truth and a disregard for all authority, and with perseverance to seek that truth in the face

of all difficulties. Can we hope in five years to change a schoolboy of seventeen into such a man, or even to put him in the fair way of becoming such a man after some years of further experience? The former hope is vain; the latter is alone capable of attainment, provided we have men of character to work on. For giving the student the necessary training, the medical curriculum, as at present planned, is excellent.

It is divided into three separate and distinct parts:

1. The preliminary sciences.
2. The application of these sciences to the healthy human body.
3. The modifications produced on the action of the body by disease and the influence of remedial agents.

These should be clearly separated, and no student should be allowed to take up the study of any part of a subsequent group until he has completed all examinations on the earlier one.

Agreement of Regular and Homeopathic Physicians. The *Hahnemannian Monthly* discusses in a candid tone the question raised by Dr. Cabot's address before the Boston Homeopathic Medical Society. According to Dr. Cabot, personal antagonism between the members of the two schools has disappeared. In some cases regular physicians have adopted methods of treatment which correspond in principle to the dictum *similia similibus curantur* and also have used with advantage very minute doses. Similarly homeopathic physicians do not always follow the law of similars and sometimes use very considerable doses of medicines. Dr. Cabot thinks the old schools have been wrong in refusing to consult with homeopathists and in arrogating the term regular, in refusing to believe in the candor or consistency of the homeopathic physicians, and in denying or neglecting the truth in homeopathic pharmacology and treatment.

On the other side Cabot sees wrong in the use of "proving" for "testing," the frequent use of the word cure, the use of peculiar names for drugs, and fourthly, laying too great stress on drug therapeutics to the exclusion of other remedial measures. The Monthly thinks that only the last of these objections is of any moment and claims that homeopaths lay stress on diet, exercise and all other ad-

juvant remedies. The editorial concludes by quoting the words of Cabot: "Gentlemen, we want the truth, all of it that we can get hold of. So do you. Two ships that steer for the same port are sure to come together sooner or later, no matter how far apart they may be on the ocean. If we keep ourselves in this mind, if we are fair and honest and not uncharitable, we shall pool our knowledge some day and abolish sectarianism in medicine. I hope and pray that this consummation may come in our lifetime. Whether it does or not depends largely on us—our earnestness, our honesty and our good will."

Means of Identification. Paul Prager[1] has made numerous investigations regarding dactyloscopy and its employment for purposes of identification, but he believes it suffers from drawbacks due partly to the ready changeability of the epidermis of the fingers and partly to the difficulty encountered and large amount of experience necessary in correctly reading dactylograms.

The epidermis of the fingers may be changed in various ways: Pathologically because the hands, and especially the fingers, are subject to injuries which, on healing, leave scar tissue; and artificially, because a person whose finger imprints have been taken may readily obliterate the dactyloscopic picture by means of acids or other reagents, thus rendering reidentification impossible. It may also happen that a criminal availing himself of a previous experience with dactyloscopy, in his future operations renders the imprint deceptive by wearing gloves.

Prager has discovered, however, by numerous examinations and comparisons, that the impressions made by the upper jaw are very characteristic and distinctive, no two among thousands being alike in regard to the number, length and breadth of the teeth and the curvature and radius of the maxillary arch. The height, breadth and depth of the upper jaw present equally many striking and readily recognized differences as well as the possible gaps in a row of teeth, with their innumerable variations. The formation of the palatine membrane, which shows plainly on each impression, is never alike in any two individuals and remains unchanged all through life.

(1) New York Med. Jour., June 29, 1907.

The circumstance that each individual jaw impression presents so many characteristics insures that even though one or more lines may be obliterated or rendered unrecognizable during life, either by action of time or through pathologic changes, there will always remain a sufficient number of ineffaceable characteristics to render absolute identification possible.

He illustrates some impressions of the same jaw taken no divergences. Still other illustrations show different jaw observations as they appear at daily observations. The difference in aspect, form, and size is enormous.

Taking of the impression is very simple to learn and by taking a plaster cast of such an impression, inscribing it with the necessary data, and keeping it on record, one obtains an incomparable identification mark of a human being. If the system were introduced so that people who follow dangerous callings should put by an impression of the upper jaw, it would undoubtedly be feasible, even in the skeleton, to establish the identity of a person who had met death by drowning, or by falling from a height or by a mine accident.

Ambulance Speed. In an editorial[1] deprecating the abuse of ambulance privileges the following pertinent comments are made: Ambulance drivers and young surgeons on ambulance service are somewhat prone to take advantage of their opportunity to make their way through crowded streets with all the speed they may for the sake of the effect produced by the clang of the bell and the right of way so willingly accorded them. This privilege, however, can readily be, and in the past has frequently been, abused in the way that we have pointed out. It is needless to remark that such stringent regulations should be enforced with regard to ambulance service as will lessen the number of accidents. Surgeons who are merely transferring patients with regard to whom there is no special haste should be held strictly responsible for accidents due to speed greater than is necessary in the particular instance. The rushing across avenues crowded with traffic

(1) Jour. Am. Med. Assoc., Aug. 3, 1907.

should never be permitted except under the most urgent conditions, and those absolutely known beforehand and not merely presumed on general principles. We have no doubt that a judicious reform in this matter will effect a saving to hospitals in bills of repair and will avert not a little human suffering and even save lives. Some accidents are inevitable, but the considerations we have suggested are sufficient to make it clear that they may be lessened to a noteworthy degree.

The Physician in First Aid. Physicians in the large cities are likely to avoid, rather than seek, those gatherings that indicate the presence of the victim of illness or accident, said a medical journal[1] recently: The explanation which one often hears for the assumption of this attitude sounds reasonable enough on the face of it: "I have no instruments, no medicine with me, and if I had them I should probably not have time to make use of them. The ambulance will be here in a few minutes and the patient will be taken to the hospital, which is surely the best place for him. By pushing in I shall be able to accomplish nothing and shall just add one to the crowd which is already too large." And so the patient is left to the tender mercies of innumerable would-be good Samaritans, who, in lieu of oil and wine, administer generous doses of whisky, souse the patient with water, and enthusiastically order each other about.

While the physician's conjecture as to the probability of his being of any material assistance is undoubtedly correct in the majority of instances, it occasionally happens that prompt action might be the means of saving life. An improvised tourniquet or digital pressure intelligently applied in case of a dangerous hemorrhage, or the immediate application of artificial respiration to a victim of electric shock or drowning might be the occasion of saving a life which would be sacrificed if no treatment were instituted until the arrival of the ambulance. An interval of ten to twenty minutes not infrequently occurs before it is possible for an ambulance to reach the scene of accident. It is, therefore, the duty of a physician to at least ascertain what the trouble is and whether his services are required.

(1) Editorially in Jour. Am. Med. Assoc., Aug. 24, 1907.

If life is not threatened the physician can often do much to render the patient more comfortable until further assistance arrives. The very fact that some one is present who recognizes the condition and knows what should be done is often of inestimable comfort to the injured one. The authoritative voice of the physician can at least stop the senseless and often harmful efforts of the volunteer helpers. In case of syncope any constricting clothes can be loosened, and even the epileptic, who creates such a sensation among the onlookers by his dramatic performance, will surely appreciate a little care exercised in saving his tongue another vicious laceration. The passing physician will nearly always prove to be of some assistance, and by volunteering he may save himself the reproach of allowing the death of some individual when it was within his power to prevent it.

Prognosis. Pye-Smith[1] concludes an article on prognosis as follows:

Acute diseases following on chronic are the most dangerous.

A degree of pyrexia, which is unimportant in a child, is serious in an adult.

Typhus is most dangerous in the case of elderly patients and infants; less so in young adults.

The most severe forms of scarlatina occur in children; but whooping-cough is dangerous only in young children.

Pneumonia is benign, as a rule, in children and young adults, and is fatal in drunkards.

Acute primary pleurisy is only dangerous when the pericardium is also affected; but the pleurisy secondary to tubercle, to cancer, or to Bright's disease is usually fatal.

Edema of the glottis is seldom the cause of death; edema of the lungs is often so.

"Capillary bronchitis" is, in most cases, lobular catarrh.

Hemoptysis is seldom fatal by flooding the lungs. If it is, the cause is probably a small aneurysm of the pulmonary artery.

Hematemesis is seldom directly fatal. Valvular lesions appear to check rather than aggravate the progress of phthisis.

(1) Bristol Medico-Chirurg. Jour., March, 1907.

Sudden death is more often due to aortic incompetence than to aortic obstruction, and more often due to mitral obstruction than regurgitation.

Apoplexy, which is ingravescent, is almost always fatal.

Malignant growths are most rapidly fatal in children and young adults. In old age they spread slowly, and sometimes undergo more or less complete wasting.

The Vegetable Unit Description. That all men whose lives are not devoted exclusively to the "exact sciences" are prone to become careless and inexact in their speech is possibly to be expected. That physicians when describing matters of scientific personal observation should retain their colloquial looseness of expression is, however, greatly to be deplored. In referring to this matter editorially a medical journal[1] makes the following pertinent suggestions: A common error of medical writers, which is by no means limited to the novice, is that of describing the size and shape of a pathologic growth or area of tissues by comparing it with some common object, a method which is a constant source of annoyance and difficulty to those who would afterward make use of their descriptions. The chief reason why this method is defective is that an object that may be common in one country may be unfamiliar in another, and also that the size of the same class of objects may be subject to great variations. For example, English writers say frequently that a lesion is the size of a horse bean; now what will that signify to an Italian student of the literature? To specify sizes by comparisons to such things as a horse chestnut, a lentil, a watermelon seed, or a muskmelon is sure to give rise to international complications; and our foreign contemporaries are just as prone to these provincial comparisons as we ourselves are. In an article at hand, in German, the author refers to a *"kastaniengross"* tumor, and to another the size of an *"Apfelsine;"* now, does he appreciate that to an Italian reader the word chestnut calls to mind an object several times as large as it does to an American, and how is the reader of any nationality to know whether the author refers to the Italian chestnut, which is a common article of commerce in Germany, or to the native German chestnut, which, if our remembrance

(1) Jour. Am. Med. Assoc., Sept. 28, 1907.

is correct, is intermediate in size between the Italian and the American variety? And as for the orange-sized tumor, has our German pathologist ever seen an American navel monster, or does he know only the smaller fruit of southern Europe? Examples might be multiplied to great length, and will occur to every reader of medical literature, to whom they have probably been a source of time-consuming annoyance. When every country has some system of weights and measures, why not use it in describing objects which possess dimensions that it is desired to record? Even although the system be no better than the one in vogue in English-speaking countries, it furnishes at least a fixed unit, which does not vary according to the climate or the season, as do the vegetable units so dear to many writers.

The Time of Death. While it has generally been accepted, for no very good or sufficient reason, that most deaths occur in the early morning hours, investigation proves, in this as in so many other cases, that "general opinion" is at fault. The matter is dealt with editorially[1] as follows: In a recent study of what Sir James Paget would have called the "chronometry of life," Mr. Marsh has investigated, among other things, the time of day at which death is most likely to occur. For this purpose he analyzed 36,000 records, omitting only deaths from accident or suicide. His results are interesting because they controvert the usual view that death commonly occurs in the early morning when the vital forces are at a low ebb. Marsh's figures seem to show that, on the contrary, most deaths occur between 2 and 6 o'clock in the afternoon, i. e., at the time when the vital forces are normally at their highest point. The fewest deaths occur between 7 in the evening and midnight. In women the time of death tends to be a little earlier than in men, and in children a little earlier than in women, this, too, following the line of the differences under normal circumstances in the pulse and temperature maxima. Mr. Marsh claims that there has really been no accurate investigation on the point in question, and that the usually accepted view has been based on generalities rather than on accurate observation. The figures presented are probably not sufficient to warrant accepting these conclusions as final.

(1) Jour. Am. Med. Assoc., Dec. 29, 1906.

The Origin of Life. The "whence and whither" of human existence is as much a sphinx's riddle today as in the days of the Rameses. The equally unanswerable, and perhaps unprofitable, question, as to the beginning of life on this planet, is one of the eternal subjects for speculation and for the exercise of the scientific imagination. Says a medical journal[1] recently: A number of years ago Lord Kelvin offered what was then considered by many the extravagent hypothesis that life first came to this planet on meteorites thrown off from other celestial bodies and carrying the germs of their existing organisms. The theory was widely discussed for a time, but had its little day and was apparently dropped as a mere hypothesis probably incapable of proof and open to too many objections to require serious consideration. It is not dead, however, and it has again been brought before the public in a modified form by the distinguished Swedish physicochemist, Arrhenius, who figures out the possibility of germs, even from other solar systems, reaching us, propelled by light and with their vitality maintained by the preservative action of the low temperature of space. It is somewhat significant perhaps that one to whom the more advanced chemistry of the day owes so much, should consider it worth while to assume an extra-mundane origin of life, when so many of the minor chemicobiologists are proclaiming that lif is itself a form of chemism. If the universe is permeated with wandering germs and all life and evolution are everywhere essentially the same, we are then liable to almost anything in the way of patholcgic possibilities. The chance arrival on our planet of some ultra-virulent germ might at any time produce a catastrophe as fatal to the human race as the collision of a dark star with our sun so vividly imagined by Professor Newcomb. Such speculations are perhaps of no practical use, but after all the question of the origin of life is an ever recurring one. Any one who, in the present status of our knowledge, assumes that it is settled —that any hypothesis can be considered as definitely proved —must have very inadequate ideas of what constitutes proof.

Transmutation of Metals. As is well known, modern

(1) Editorially in the Jour. Am. Med. Assoc., Aug. 3, 1907.

chemistry owed its origin to the experiments and observations of the alchemists, which were made for a very utilitarian purpose, namely the discovery of a means of transforming the baser metals into gold. The strict science of chemistry by its practical application has many times repaid its debt to utility and it promises now to attain the apparently impossible object with which the alchemists set out. In accomplishing this object it is very likely that one of the chief theories, which has contributed as much as any other theory to scientific progress, will be shown to be no longer tenable. The theory that the atoms of elements are the ultimate particles of matter is contradicted by the facts that have been learned from experiments with radioactive substances and the possibility of the decomposition of atoms and of the change of one element into other elements of the same class is now satisfactorily proved. According to the *Pharmaceutical Journal*[1] Sir William Ramsy will shortly communicate to the Chemical Society a full account of his research on radium emanation. In the meantime he has written a letter to *Nature* by which he establishes priority in what promises to be a remarkable discovery. A few years ago he and a collaborator showed that the spontaneous change of the emanation from radium results in the formation of helium. When the emanation is in contact with, and dissolved in water, the inert gas which is produced by its change consists mainly of neon, with only a trace of helium. With a saturated solution of copper sulphate instead of water no helium is produced; the main product is argon, possibly containing a trace of neon. The residue after removing the copper showed the spectrum of sodium 4 and of calcium and the red lithium line in a very faint degree. The results appear to indicate that radium emanation belongs to the helium series of elements. The copper acted on by the emanation is degraded to the first member of its group, namely, lithium. The journal remarks that if "Sir William's conclusions are correct, it is now only a question of time when that most ancient of all problems—the transmutation of the baser metals into gold—shall have been solved." It will not be desirable, however, to invest in any schemes looking to

(1) Aug. 3, 1907.

this process until further experiments along this line have shown its practicability.

Medical Illustrations. Max Brödel[1] gives the following suggestions for improving medical illustration. The reason for inefficiency in medical illustrating is that the medical illustrator is not sufficiently familiar with the objects to be illustrated and the scientist, although he has the knowledge and clear conception of the matter, has not time or ability to represent it on paper. Brödel, therefore, believes that: 1, The artist must be taught more medicine, and 2, the scientist must be taught more art.

1. Medical illustration is a special branch of art and requires a systematic education; therefore, the artist should devote his entire time to it. This branch of art is not taught as are the other branches, although it should be, for owing to the highly-specialized character of medical work, more training and teaching is necessary than in connection with perhaps any other art work. The simple rule laid down to art students, "Copy naively what you see," is by no means enough, for then the drawing would be merely a worthless imitation of a photograph, with all the redundant accidental forms obscuring the essential features. A medical artist's eye should not work merely like a camera, it should digest the object and bring out the features which justify the task of picturing the case, without, of course, neglecting the realistic and truthful characteristics. Thus, an intelligent drawing is possible only if the artist is thoroughly familiar with other examples, similar in character to the one he draws. He must know the normal form, its variations and the anomalies, finally the minute structure, for nothing guides the pencil more surely than a knowledge of histology. It is with the aid of such accessory studies only that the artist can intelligently interpret the characteristic features of the case before his eye. The education of a medical illustrator should, therefore, begin in the dissecting room and should be coupled with the study of autopsies and histology.

2. It is of equal importance that the scientist should know more about art—the more the better. This does not mean he should make his own illustrations, although a

(1) Jour. Am. Med. Assoc., July 13, 1907.

primitive outline drawing done by a scientist often has more truth in it than an elaborate halftone drawing by an artist. But he should do a little more than has hitherto been the case. The trouble will be amply repaid if he cultivates the habit of sketching his cases in his records for his benefit and that of his co-workers. A glance at such a sketch will years after bring back to one's memory the important features of a case much more vividly than any description. Moreover, such sketches may form an excellent basis for the work of an artist. The region or regions of especial interest to the investigator should be drawn from the front, side, or in section, in simple outlines similar to the prints of the rubber stencils now in use, only life size. In order to eliminate the individual element as much as possible, a sufficient number of such tracings are superimposed. This gives the average contour which should be reproduced in some faint gray or brown tint in large numbers in order to serve as a basis for the records. In this day of specialized work almost every physician or surgeon requires a special set of outlines different from the rest. He knows best what he needs and should endeavor to work them out himself. The contours of smaller structures, such as the eye, ear, nose and throat, might to advantage be drawn enlarged; contours of the entire body, on the other hand, reduced. On such charts the clinician, surgeon, anatomist or pathologist can insert the salient features of a case. If a sketch fails to represent the structures properly the making of a model of either clay or wax, linen, gauze, rubber tubing, wire, etc., will usually solve the difficulty; the required sketch is then made from this model. It is undoubtedly the duty of the physician towards his profession to reject inartistic and incorrect work and thus contribute toward the elevation of the standard of medical illustration and so of medical education.

Historic Salt-Free Diet in Ascites. That the newest method may be hoary with age is exemplified by the following:[1] The value of a salt-free, or at least a salt-poor, diet in the treatment of edematous conditions is generally conceded to be a comparatively modern theory. That the

(1) Jour. Am. Med. Assoc., Aug. 31, 1907.

fact was known, clinically at least, ten centuries before the Christian era and probably much earlier is evidenced by the Charaka-Samhita. The Charaka-Samhita and the Susruta-Samhita are ancient Hindu medical works compiled from a still more venerable work, the Ayur-veda, which the Hindus say was written by the gods. The date of the compilation of the Charaka is probably 1000 B. C. and it corresponds to the Hippocratic treatises; in fact, there is little doubt that Hippocrates made free use of the work. The Charaka is written in Sanscrit of the most ancient construction. This ancient work, after describing the various kinds of "dropsy" and the appropriate treatment for each, recommends for "abdominal dropsy" (ascites) tapping. The postoperative treatment reads as follows: "When the water has been let out the patient should first observe fasts and then take 'peya' (thin gruel of rice or other grain) without any kind of oily substance and *salt*. After this the patient should for six months live on milk only. For the next three months he should live on 'peya' mixed with milk. For the next three months he should take the rice . . . with milk but *devoid of salt*." The following prognosis is given by Charaka if the instructions are followed: "Conducting himself thus for one year, one may conquer abdominal dropsy characterized by accumulation of water even when it has manifested itself in a pronounced way." This is a reminder that "there is no new thing under the sun." With peculiarly distorted views of human physiology and still more weird conceptions of pathogenesis of disease, these ancient writers, from careful clinical observation, had achieved no inconsiderable skill in the treatment of disease.

Hippocratic Methods. The methods of Hippocrates and the work accomplished by him are the subject of an article by G. Lorimer, part of which is as follows: The origin of Greek medicine is involved in obscurity. There is no reason to believe that medical knowledge, any more than philosophy, was introduced into Greece from Egypt, though Greek physicians may subsequently have become acquainted with the state of knowledge which had been reached in Egypt, as well as with Egyptian methods.

The earliest allusion to the healing art is found in the writings of Homer, who claims for it a divine origin. The

sons of Aesculapius are mentioned, not as priests, but as warriors in the Greek army, having special skill in the treatment of wounds. The first recorded instances of surgical treatment is that of the wounded Menelaus by Machaon. There are other allusions to physicians in Homer; they are always referred to with regard and veneration, and it would seem that, in the state of society then described, there were physicians distinct from the priesthood. But in later times we know that medicine was cultivated by the Asclepiadæ, the doctor-priests of the temples of Aesculapius. The asclepeia, or temples of Aesculapius, were erected in healthy sites, near thermal springs, and the sick and maimed resorted to them to seek the aid of the god of health. In some respects they resembled modern hospitals, but a health resort like Buxton in the fourteenth century was a typical asclepeion, for there the sick and maimed resorted to drink and bathe in the waters of St. Ann and to worship in her chapel and to invoke her healing aid.

Votive tablets recorded the symptoms of those healed, and from these primitive clinical records of theurgic medicine the Asclepiadæ compiled the data on which the earliest generalization of medicine as an inductive science was based; but in the state of knowledge and philosophical speculation at that time, the anger of a god was a sufficient reason for a disease and a dream for treatment, and that a physical phenomenon must have a physical cause was not, as now, a fundamental principle in physical science.

In one of the most distinguished of the asclepeia, namely, that of Cos, preëminent and high above all others of the Asclepiadæ, stands out that great central figure, whose name will for all time be connected with the foundation of medicine. Born about 470 B. C. of a family of priest physicians, and said to be a lineal descendant of Aesculapius, Hippocrates lived during the most brilliant epoch of the intellectual activity of ancient Greece, and, relatively, in the history of the world, and in circumstances which combined by a magnetic influence to exercise a widespread power on the current of Greek life and thought; so that, in this period of great intellectual development, it only needed a master mind like that of Hippocrates to bring

to bear on medicine the same influences which were at work in the other sciences.

In addition to actual contributions to medical knowledge, Hippocrates recognized three things which are more or less characteristic of scientific medicine. He rejected the theory of a supernatural origin of disease, teaching that all maladies have a natural cause, and he discovered that accurate observation is the real foundation of all knowledge, and thirdly, he recognized as the real cause of recovery a spiritual essence or principle, the *vis medicatrix naturæ.*

Hippocrates attached great importance to the doctrine of crisis, which was an integral part of his humoral system. Connected with this was the hippocratic doctrine of critical days and its bearing on the subject of prognosis which he estimated and foretold with skill. It may be observed that the ancient Greek physicians did not use the words "crisis" and "critical" in the same sense as they are used by us in modern times. Crisis meant with them the act of judging, and a critical day was a day for judging. Certain days from the onset of the disease on which the crisis occurred, were considered to be favorable, and others the reverse. Hippocrates, probably influenced by the Pythagorean doctrines of number, taught that critical days were to be expected on days fixed by certain numerical rules—in some cases on odd, in others on even numbers.

The following may be given as an illustration of his skill in reporting cases: "Philischus was laid up—first day acute fever, he perspired; second day aggravation of symptoms. On the morning of the third day, and up to noon appeared free from pain, but in the evening acute fever with perspiration, thirst, tongue dry, passed black urine, did not sleep, delirium. Fourth day, general paroxysms, urine black. On the fifth day, about noon, blood escaped from the nostrils; urine varied in appearance, with thready clouds resembling semen irregularly suspended in it; night distressing; insomnia, delirium, cold extremities, lost speech, had a cold sweat, extremities livid. About the middle of the sixth day he died. *The respiration was throughout large and rare, like that of a person who required to be reminded to breathe.*" The breathing described in this case appears to be the same as subsequently

described by Dr. Cheyne (which has subsequently received the name of "Cheyne-Stokes" respiration) for the first description of which the "Father of Medicine" has priority of claim. The following sentence indicates that Hippocrates had observed a striking peculiarity of albuminous urine and connected it with disease of the kidneys. *"When bubbles settle on the surface of the urine they indicate disease of the kidneys and that the complaint will be protracted."* Hippocrates also employed immediate auscultation for the discovery of fluids from the succussion sound and also was the first to employ thoracentesis for the treatment of empyema. There are two modes of operating: First either to open into one of the intercostal spaces by actual cautery or bistoury; or second, by perforating a rib. Whatever method is chosen, it is essential that the wound remain open till the fluid is entirely evacuated, and there is no further tendency to effusion. If the opening should show a tendency to close it must be prevented by introducing a metallic sound.

In conclusion, it may be observed that though the genius of Hippocrates accomplished so much by careful deductions from well-observed facts, in the state of knowledge at that time, when we compare the position of medicine and surgery, then one complete and comprehensive whole, the contrast with modern medicine is very great—the enormous growth, expansion, and subdivisions of the latter are ever developing an increasing number of specialisms; and though there are specialists and specialists, still it is in accordance with the principle of division of labor which we see in every field of active life, and is justified by more work better done.

Next, if we reflect on the methods of observation by Hippocrates and those in modern times, the former were made entirely by the medium of his unaided senses, the latter by means also of instruments of extreme accuracy, delicacy and precision. Perhaps our ancestors, depending entirely on their unaided senses, and by refined cultivation of them, attained a perfection in pithy and graphic description of disease which will never be surpased—for instance, the description of approaching dissolution by Hippocrates, still appropriately known as the "facies Hippocratica"—and the word pictures of disease by Sydenham

and Groves stand out in graphic contrast to the redundant mass of pointless verbiage in some modern descriptions of disease.

But if description is less graphic, by the aid of powerful instruments and physical and chemical methods of research, observations have been extended into the realms of the invisible world and data have been obtained and recorded with almost mathematical precision. We have known the limits of our unaided senses; we know what has been revealed to our aided senses; but we do not know, nor can we even guess, at the limits of the means by which they may be assisted, or "the invention of instruments, which will become only a little more separate from our mental selves, than the outer sense organs with which we are constructed."

Further, Hippocrates knew little of human anatomy, for the reverence for the dead among the ancient Greeks precluded dissection; and he knew still less of physiology, for, such as it then was, it was subject-matter of study for the philosophers, but the sciences of chemistry and biology, which have sprung up centuries after his time, have secured for medicine a scientific foundation.

It is to the growth and progress of the physical sciences and their closer and more intimate union with medicine that its present advanced position may be ascribed rather than to a relatively increased knowledge in the art of medicine by observation from experience.

But whatever advances may in the future be achieved by the progress of the physical sciences—whether on a purely physical basis of life, and by the most rigid experimental methods, the iatro chemico physicist may produce all the phenomena of disease in the physiologic laboratory and appropriate to himself the whole domain of medicine, or whether the two spheres are coördinate and complementary of each other—still all orthodox clinicians must trace their apostolic succession to Hippocrates and his method of reasoned experience.

Finally, let the high ethical tone be noted which pervades the writings of Hippocrates, and his serious and elevated conception of the duties and responsibilities of a physician. "Medicine," he says, "is of all arts the most noble;" and, again, enumerating the qualities of a good

physician, honesty of purpose and love of work for its own sake, he adds: "Physicians are many in title but few in reality"—a remark which even at present cannot be entirely denied, for within the pale of the profession as well as outside, there is unfortunately no security against disloyalty, the sophisticated perversion of knowledge, and the abuse of trusting confidence for sordid ends.

Seditione, dolis, scelere, atque libidine et ira
Iliacos intra muros, peccatur et extra.

The sentiments which he then expressed as to the sacred confidence of physician and patient—the singleness of aim, the avoiding of imposture, the solemn responsibilities of the duty of a physician, and in spending his life in purity and self-denial, are still as binding as when they were uttered by the Father of Medicine—uttered in the dim twilight of pagan philosophy and polytheism, but worthy of the more advanced epochs in the moral evolution of the world.

The Ship Surgeon. Of the position of ship surgeon the following has recently[1] been written: Many internes have now completed their hospital service and are seeking a vacation before entering on active practice, and a much greater number of students will presently take their degrees after several laborious years. As only a small proportion of the latter can secure hospital appointments some way by which the others can combine remunerative work with wholesome recreation is desirable.

For such men positions as ship surgeons are ideal; these positions may be held for a few months. English graduates gladly take them. Students are often worn out by their long terms of mental and physical work, and a few trips across the Atlantic or to Indian and Chinese ports are of great benefit. As arrangements for this work are made in the home offices of the companies, British physicians have the advantage of us, for their merchant marine commands a far greater number of ships, which visit nearly every mundane port, and their ships, even those which come to our coast cities, naturally have English physicians. The ships owned by American companies have as naturally American physicians engaged.

(1) Editorially in Jour. Am. Med. Assoc., June 1, 1907.

The ship surgeon must be exceedingly well-equipped. He may be the only physician on board, and, of course, he is the only one in authority, having all the responsibilities which go with authority. He must be a competent surgeon, though he may not once in several voyages be called on for major work; nevertheless, at any hour a life may have to be saved entirely by his ability to remove an appendix or a dural blood clot. Among the crew fractures and dislocations may occur at any moment. His ideas concerning all the infections must be very precise; and he must have altogether adequate knowledge concerning sanitation and the principles of quarantine; else the blame for preventable deaths, not to speak of serious economic losses to his employers, would be laid on his shoulders. If there is a large steerage his obstetric abilities may be taxed, and he may devoutly hope that on such occasions there will not be a heavy sea. His skill in psychotherapeutics will be called into play in seasickness; probably no other means has ever proved really effective.

But apart from professional matters, an experience as ship surgeon should be very beneficial. The young physician has his views of life wonderfully expanded. His time for recreation is ample. During every trip he will meet most engaging people, cultivated men and women (many of them teachers) on their vacations, with whom conversation will be a continual delight; and citizens of European countries whose opinions will certainly have a liberalizing effect on his not yet matured mind. Between voyages he may make brief visits to great cities, which contain so much that is essential to a liberal education.

As intimated, however, such a position is not suggested as a life career; the income can never be large and, taking it month in and month out, there is not enough professional work to fill in a live man's time.

Christian Science. R. C. Cabot[1] discourses in a somewhat facetious way of the methods of Christian Science which he compares with regular medicine, showing how in many cases the psychic method of treatment has the advantage. He says: To refute their cures of cancer, infections, degenerations, fevers, or epilepsy is too easy. Of

(1) Kansas City Med. Record, February, 1907.

course they don't cure those things. The interesting question for us is: "What do they cure and how can we learn to cure it too?" They cure nervous disorders, not only or chiefly nervous prostration in its ordinary sense, but nervous dyspepsia, constipation, insomnia, etc.—affections which it is no exaggeration to say make up one-half, and the most unsatisfactory one-half of our practice. Their patients are mostly nervous women; so are ours. They do not cure them all; neither do we. They utterly fail as we fail in some apparently psychic diseases such as the depressed phase of ordinary insanity.

While Dr. Cabot cannot accept the theory of Christian Science he finds two great public services performed by the mind cure movement. 1. Its insistence on certain important aspects of the truth about health that have not yet received due attention; 2, its just criticisms of certain medical faults.

There are in this system three main articles of belief:

1. People are sick because they think so.

2. People are sick because they don't behave themselves properly.

3. The thought of sickness is itself a pernicious one and should be banished so far as possible from consciousness.

The author admits that there is much of truth in the first tenet. While of course cancer, tuberculosis, syphilis, nephritis, endocarditis, and a host of other diseases are not produced by any mental influence whatever, who of us has not met with the type of patient who, having a pain in his left side and a little palpitation, lies awake, loses his appetite, worries himself sick, and turns up at our office weak and miserable because he is afraid of heart disease? There is no question that the fear of disease can lead, through loss of appetite and sleep, to serious disturbance of nutrition which in turn predisposes to infection.

Of the second tenet there can be no doubt. Aside from the obvious harm done by alcohol, venereal disease, and reckless living, there is: (a) The mass of women who by the inertia of rest are thoughtlessly drifting anywhere. (b) The mass of men who by the inertia of motion are recklessly rushing nowhere.

The third fundamental principle in mind cure is the

perniciousness (for the patient) of the idea and atmosphere of disease. In this principle the author believes they are wholly right, although their way of expressing it is often absurd. It is good for a physician to throw himself into the study of disease because it makes him forget himself. But we may fail to realize how bad this same consideration of disease is for the patient because it makes him think of himself. The very sight of the doctor and the associations that go with him may be bad for the patient to an extent that we are not likely to appreciate ourselves, especially as we know that in acute illness our visits are often the best thing in the patient's day. Therefore it is a good thing for any community to have in it a certain number of mind curists to preach the perniciousness of the medical atmosphere when it can possibly be avoided.

The neurasthenia of Miss Barrett was kept up, according to Chesterton, by the atmosphere maintained about her by her father and her physicians until Browning broke in, eloped with her and carried her off to Italy. The physician should take care to introduce as little of the medical atmosphere into the sick room as possible. More and more Dr. Cabot finds himself obliged to say to patients: "Don't come to me or to any other doctor at all any more unless you get the measles or a broken leg. Until you get your mind off yourself and onto something better worth while, you will never be well. Therefore, as long as you keep doctoring you won't get well."

The mind curists were the first to announce a principle, which has since been stated in a scientific way by Freud, when they claimed that in order to cure certain diseases it was necessary to discover and bring to the patient's attention some hidden sorrow, jealousy, or shame, which might then be entirely removed. Cabot quotes as follows from an exposition of the views of Janet and Freud by J. J. Putnam:

"It has been found that painful experiences are often enabled to work mischief just because they are hidden from the patient's view. The aim then ought to be to bring back the hidden experience into clear consciousness, so that its real significance can be estimated, after which the reorganization of the disordered forces of the mind is

likely to take place of itself. Sometimes the result thus arrived at can be attained by inducing the patient to talk at length and in full detail about all the circumstances connected with the onset of his illness. * * * In a certain sense, it may be said that the hands of the clock are thus turned back to the date of these events, and that the patient is made to live over again that period of his life. Under these circumstances one can deal with him as one would have been glad to deal with him at that time, but with the difference that he is now more in the mood of responding favorably to encouragement and to reassurance. His weakness and fatigue may indicate that he is carrying a burden that is unseen."

Does all this sound to you very fanciful and mystical? Then remember that you are listening to a paraphrase of the words of one of the greatest neurologists since Charcot, and further that these conclusions are the result of many remarkable therapeutic successes attained through the uses of the methods and conceptions here suggested. It is now solid science, and we have been verifying its results at the Massachusetts General Hospital. But do not let us forget that the mind curists preached and practiced these doctrines long before we did, and that even now the mind curists are still, and for a long time will probably be, the chief practitioners in this field. Let us acknowledge, therefore, their scientific insight and their present public service, even if we conceive that they only revived the practice of full and free confession—often good for the body as for the soul.

As one of the criticisms of medical men by Christian Scientists, which he deems more or less just, Cabot instances their objection to the habit of medical men which he terms "Sitting on the Safety Valve." One of the justest causes of complaint that the mind curists have against our profession is that our conception of the psychology of the sick is often a ludicrously simple one, based chiefly on the analogy of a fatigued muscle which needs inactivity in order to recuperate. Rest is our far too universal formula: "Do less; don't work; don't worry; live like a vegetable; empty your mind of its troubles; be calm and quiet," we say. We try to turn the lights down and let the energies cool off, to mitigate the ardor of the patient's nature and

slow down the activities of his life. This is often a mistake arising from the wrong conception of neurasthenia. The true method is not to stop thought, which is impossible, but to direct it into healthy channels and to stimulate the psychic activities and thereby the physical powers. "Unsatisfied affinities" is a much better formula for neurasthenia than "tired nerves." The mind curists have steadily insisted that neurasthenia is a disease of character and curable by proper mental training. We are fast coming around to their position.

Dubois's "Psychic Treatment of Nervous Disorders" puts in a scientific form what the mind curists had formerly taught. Mind cure, for Dubois, is not absent treatment nor hypnotism nor the use of placebos and other quack remedies, but simply education. Education fitted to the needs of the neurotic and carried out largely by the neurotic himself when once it has been started and thoroughly explained to him by the physician.

The treatment of every case begins with a thorough and searching physical examination and with the exclusion of every organic disease that is subject to treatment by ordinary physical and pharmacologic methods. Then the whole matter, including the method of treatment, is explained to the patient, and his coöperation so far as possible obtained. Reasoning, encouragement and above all practice are the methods chiefly employed. There is no hypnotism and very little suggestion in the technical sense, but self suggestion by the patient himself to himself is the chief method of removing false auto-suggestions. No apparatus and no special methods are used. Conversation is the very simple word used by Dubois to describe his treatment. "I relieved him," he says, "in three conversations." In some cases isolation is used to reinforce or continue the effect of the conversation. Diet and general hygiene are most carefully attended to, and drugs are given whenever clearly indicated, but for that awful triad of neurasthenia symptoms, anorexia, insomnia and constipation, he does not use drugs.

Another accusation of the Christian Scientists, is that physicians do not cure their patients of the "doctor habit." Cabot classifies patients who desire the doctor to make very frequent visits as follows:

1. Those whom we must visit very frequently for a time in order to educate them out of a doctor habit previously acquired.

2. Those who can never be educated out of the doctor habit, who are pauperized past recovery, and in whom, therefore, we can work some comfort and no harm by allowing them to continue the habit.

But besides these two groups of persons whom the doctor is justifying in petting and humoring, there is a third:

3. Those, namely, who are not incurably perverted, who could be cured of the habit, yet who are not receiving from their physicians any of that rigorous, tonic treatment which should end in their getting free of doctors and doctoring altogether. Here the doctor must often seem cruel, as the mother who lets her peevish child cry seems cruel.

The physician is also accused of being the cause of disease. Cabot admits that the patient is frequently made worse by having his attention drawn to his condition by frequent examination and treatment of actual physical ailments. He relates a case of a hysterical young lady made worse and eventually bedridden by the mental worry resulting from the discovery by her physician of a well compensated heart lesion. He concludes as follows:

1. The mind cure movement has rendered notable public service because its main ideas are important and, in spirit if not in their letter, true.

2. The mind cure movement exerts a force of healthy criticism upon the physician's tendency (a) to ignore the possible aggravation of disease by the mental effects of the methods of diagnosis and treatment which he uses; (b) to encourage the doctor habit, and (c) to treat neurotic cases either by an attenuated and diluted mental régime or by "sitting on the safety valve."

Relation of the Pharmacist and Physician. The relation of the pharmacist and physician and the future of the profession of pharmacy is being discussed as a live issue in many pharmaceutical journals and is the subject of addresses delivered by Dr. J. N. McCormack and S. Solis-Cohen at the meeting of the American Pharmaceutical Association. In these discussions it is assumed that the interests of the two professions are identical and that the relations of the pharmacist and the physician

should be entirely harmonious. From the medical standpoint it is claimed by Dr. McCormack that there is an actual antagonism on the part of many retail pharmacists and that this antagonism is shown by the practice of recommending patent and proprietary medicines and also by the practice of counter-prescribing. On the other hand, druggists and pharmacists complain that physicians in many cases dispense their own medicines to the injury of true pharmacy and also that they prescribe ready-made preparations and even proprietary articles to the detriment both of their patients and of the retail pharmacists. McCormack instances one form of counter-prescribing which he believes should be abandoned by druggists, and that is the prescription for venereal diseases.

Some representatives of the pharmaceutical profession go so far in their opposition to the doctor dispensing his own medicines that they have proposed that this practice should be forbidden by law, and this is in fact the law in certain European countries. It seems evident, from a consideration of the arguments presented on both sides, that a certain differentiation in the ranks of those who sell drugs should be made. It is well known that in Germany a sharp line is drawn between the pharmacist who is a professional man, and the druggist who is a mere tradesman. In this country the pharmacist after having received a professional education is frequently placed in circumstances very unfavorable to the continuation of a professional life. The commercialization of pharmacy has extended so far that in most places the druggist and his clerk must perform the duties of a tradesman keeping a general store. Professional work is provided for only in the putting up of the few prescriptions which are called for and which are seldom sufficient to occupy a man for any large part of his time. Under these circumstances it is of course difficult to maintain professional knowledge and skill. The necessity of carrying on, in connection with the professional practice, a commercial business tends to make the pharmacist look at matters more from a commercial than from a professional point of view. Isolation from other professional men and to a large extent from the medical profession tends to render this lowering of the professional ideal more marked. That pharmacy may continue to be

a true profession requires that its scope shall be sufficiently widened so that there may be ample opportunity for the exercise of professional attainment. The widening of this field is practically possible only in the direction of medical chemistry, emergency prescribing, and if the patronage of the medical profession can be secured, the manufacture of pharmaceutical preparations.

The present day pharmacist with a thorough chemical education and exceptional familiarity with chemical technic is peculiarly fitted to be the assistant of the physician in the diagnosis of disease and in places where there is no clinical laboratory it would be to the advantage of both physician and pharmacist for the latter to undertake, for the physicians in his neighborhood, the technical work of testing the urine and the gastric juice, and the microscopic examination of the various excreta.

Counter-prescribing is commonly set down as one of the prevailing sins of the pharmacist but it is bound to continue and it must be admitted that there is a certain class of cases which can be adequately treated by the pharmacist and which, if not treated by him, must either be treated in a superficial and unscientific way by the physician or else the patients will betake themselves to "patent medicines" or quacks. Of the three alternatives it would seem as if prescription by the pharmacist for emergency cases should be preferred. Here the pharmacist should be careful not to go beyond his proper sphere and should be prepared to give an account of what he has observed on first seeing the patient. As a solution of the difficulty it has been suggested that there should be, as it were, a third profession, a pharmacist with sufficient medical knowledge to prescribe intelligently who should be given a special license for doing so.

The manufacture of pharmaceutical preparations is in many cases practicable for the retail pharmacist and it would be desirable for physicians to apply first to their pharmacist before employing the ready made preparations, many of which are not better than can be prepared by the retailer.

The propriety of the physician dispensing his own medicines has been much discussed in certain medical journals as well as by the pharmaceutical journals. The arguments

in favor of this practice appeal partly to the desire of the physician to advance his financial interest and partly to his desire for professional success. The arguments against it are mainly two: First, the physician is not competent to dispense his own medicine; second, he ought not to do so because it is injurious to his professional brother, the pharmacist.

In answer to the first objection it may be said that physicians seldom undertake a form of dispensing for which their professional education has been insufficient to render them competent. The technical laboratory skill now required to pursue successfully the courses in chemistry, bacteriology and pharmacy given in medical schools ought to render a man entirely competent to put up simple mixtures, to fill capsules and to dispense ready-made tablets. Few physicians will undertake to make ointments, pills, emulsions, or to perform any other of the complicated pharmaceutical operations.

The objection on account of the injury to the business of the pharmacist is perhaps more important because it is greatly to the interest of the physician that the pharmacist should have business enough to maintain him as a professional man and not as a tradesman. It goes without saying that the physician should not undertake dispensing if it is likely to interfere with the proper care of the patient merely for the sake of the slight monetary profit. While it is entirely consistent with the requirements of professional service for the physician to administer medicines at the bedside in emergencies and in acute cases it is doubtful if the practice extended beyond this point will not detract from the highest professional efficiency. The thorough investigation of a case by modern methods requires so much time that the physician can ill afford to spend time in compounding medicines either for the purpose of earning the paltry increase in fee connected therewith or to save his patient the expense of a pharmacist's bill.

Relation of Physician and Patient. In considering the relation of medical men to their patients R. Maclaren[1] considers first the combination of patients, who cannot

(1) British Med. Jour., Aug. 11, 1906.

afford to pay large fees, into clubs. This system has much to commend it. It tends to promote independence, thrift, and foresight. The difficulties which arise are likely to be due to the fact that the doctor's compensation is too small to recompense him for good work and, on the other hand, members of clubs often complain of inattention, carelessness or even neglect on the part of the doctors. The elements of good in the system are many and raise the hope that the imperfections may be so far removed as to result in the survival of a satisfactory working condition. The young man who enters this work should do so deliberately and see to it that the terms on which he accepts the appointment are satisfactory. The fact must be faced that at present club work is not looked on with favor but there is no inherent reason why it should be other than pleasant; with reasonable remuneration, fair security of tenure and work well done it might be just as satisfactory as any other medical practice.

The relation to life insurance is next taken up. The author's view is that insurance, being purely a business transaction between the company and their clients, the function of the physician is limited to seeing that the former does not make a bad bargain by accepting risks which are not covered by the averages. Remuneration ought to be in due proportion to the time spent in examining each case. There is no justification for making it have any relation to the amount of the policy; indeed, the proposal to make it do so is only advanced as a reason for tendering a small fee. He suggests, however, the following compromise: Let the companies adopt for small policies a less stringent examination and more limited inquiry than for large amounts. The elaborate statements which some companies require from applicants might all be filled in before the examination, to the great saving of the examiner's time.

The author says the ideal medical man is tender hearted and sympathetic, but not weak; candid, but not pitiless. He is not only sympathetic, but he shows that he is so, partly by words but more by the efforts he makes and the attention he gives to relieving suffering. While the doctor is the guide and adviser of the patient in all matters connected with bodily health he should remember that

he is not a superior officer nor even a guardian in the strictest sense of the word. If he finds that his advice is not followed, he may determine that he will no longer occupy a useless position, but this is his ultimate resort. He can assert no claim to hold his patient against his will. The weak and obstinate man who attempts to do this is not only apt to fail but to fare badly. To no man is a thick skin more useful than to a practitioner of medicine. The worry and complaints of patients are apt to be taken as implying dissatisfaction, but this is really very rarely the case and it is well to be slow in admitting the existence of such feeling. When, however, there appears to be a want of confidence the best course is to have a frank explanation which often puts matters right by removing the misunderstanding which may be the sole cause of tension.

The doctor should endeavor to attain the state of mind which treats business life as a thing apart from social life. If the proper measures fail to secure harmonious relationship, a quiet separation without resentment should be allowed. If there has been friendship before, every effort should be made to continue it. In such cases the doctor should carefully examine his conduct to determine if possible in what way he has been at fault so as to be unable to retain the confidence of his patient. The doctor should be frank and truthful and ever ready to give such explanations as are suited to the intelligence and knowledge of his patients and to tell them in language which they can understand the nature of their ailments and the purpose of treatment. The day of "authority" is gone. The author believes that there is not very much in the relation of patients and medical men which is capable of alteration and at the same time desirable to alter. No human being in this country needs suffer for the want of medical attendance and the medical profession as a whole is as well remunerated as any other. The social position of its members is pretty much what they choose to make it. One phase of it, however, is capable of improvement—that irregularity of medical life which makes it a hard occupation. Some of this is essential and unavoidable, but the physician should have, as nearly as possible, fixed hours for his work, stated hours for consultation at home and a given time for the beginning of his visits. A good plan

to discourage the unnecessary disturbance of the doctor at unreasonable hours is to require a special fee for such visits.

In no relation of life is legitimate independence more necessary than between doctor and patient. Unfortunate is the patient who feels bound to hold to his doctor for any other reason (be it social, family, or personal) than that he has faith in his professional capacity. He is in a condition of bondage apt to be tempered by subterfuge and deceit. No less unfortunate is the doctor who is afraid of his patients, afraid of his neighboring practitioners, and whose actions are conditioned by the dread of losing practice. He had set for himself a low ideal and a still lower real is sure to result. Every man should not only guard his own independence, but be too self-respecting to interfere with that of any one else.

In all that we do and in all that we aim at, we must ever remember that we are members of an organized society with multiform relations to those about us. We are governed by the inexorable laws of supply and demand; we have our rights within those laws and so have others. We do well to obtain what is due to us, but only so long as we do not seek to encroach on the rights and freedom of others.

Snobbery in Flat Owners. Under this title an incident is related by a medical journal[1] that will seem almost unbelievable to those not acquainted with the "ways that are dark and tricks that are vain" of the modern apartment building landlord: Some years ago there appeared some correspondence in the English medical journals in regard to the propriety of physicians yielding to the requirement of some patrons that they should use the area doors instead of the front entrance in making professional calls. We have not heard that any one ever succeeded in forcing this rule on the British medical profession. It seemed then hardly possible that a similar attempt to put physicians on the same grade as grocers' delivery boys and servants' visitors would ever be made in this country, but such appears to be the case. A Newark (N. J.) physician, it is reported, has brought suit for $5,000 damages against the owner of a flat or apartment building who had made this rule and who attempted to prevent him using the front entrance,

(1) Editorially in Jour. Am. Med. Assoc., Aug. 17, 1907.

and the case is said to be arousing much interest in the medical fraternity of New York City, in certain parts of which like attempts to humiliate physicians are said to have been made. There can be but one opinion among sensible people in regard to such performances, but a consciousness of this fact will not justify a physician in submitting to them. Fortunately in most parts of this country we do not have to deal with this kind of snobbishness, but we can sympathize with those who have to contend with it. It is to be hoped that the Newark physician will obtain full damages—they should be exemplary.

Malpractice Suits. B. B. Griffith,[1] in discussing how to prevent misunderstandings and dissatisfaction, says: No arbitrary rule can be formulated whereby dissatisfaction can be avoided. The doctor who is the student of human nature and understands mankind the best will have the fewest number of dissatisfactions arising in his professional work. He gives the following advice as to the proper procedure when the patient sues for malpractice: Be prepared for such contingencies by being affiliated with some defense organization. As soon as you have an intimation that suit will be brought against you notify your defense company, giving them complete details. Give the dissatisfied patient to understand that you are to be defended by an incorporated, organized, active defense company, and in the majority of cases suit will be dropped. In the event of the case coming to trial, after the attorney has been selected, give him all the information regarding the case at your command. The defense company of which you are a member should plan and direct the detail part of the trial and post the attorney as to the law in the case. Select your expert and other witnesses and see to it that they are thoroughly familiar with all the facts in the case. Remember that, as a rule, quality of testimony counts for more than quantity. Sometimes, though rarely, it may be best to listen to talk about settlement. Such action, however, should only be contemplated after mature deliberation and consultation. As one malpractice suit usually means another, we should act in this matter along the line of prophylaxis, thereby, to a considerable degree at least,

(1) Illinois Med. Jour., September, 1907.

eradicating one of the most disagreeable possibilities of the practice of medicine, a malpractice suit.

The Age Limit. In the older countries of Europe it is unusual to find men under middle life holding positions of responsibility. In the United States, on the other hand, the exception is the other way; we have come to be known as the nation of young men. That there is a reaction taking place has been noted in several quarters of late, of which the following[1] is an example: Railroad managers, who are generally understood to know their own interests and those of the corporations under their charge, are undergoing apparently a change of views, at least in some cases, as to the expediency of excluding men of full majority or middle age from employment. If this is as we must suppose the result of experience, it means that the man of over 35 has been found to have still a reasonably long period of usefulness before him, even in the trying duties of a railroad employé. Heretofore it has been the theory that it is not profitable for roads to employ men over this age, and this, it seems, has been found too narrow a limit. While there is no doubt that many men are at their best efficiency before the fourth decade has passed, it does not necessarily follow that this is always the case or that there are not frequently greater possibilities for usefulness after that period than before. General rules are not capable of too universal application, and there are many occupations in which a rigid rule regarding age limit would be unprofitable. The fact that the railroad companies are apparently beginning to recognize this truth is significant. Young men will always be to the fore in many lines, but much of the best work will always be done by men somewhat more advanced in years. It is probable that of late years we have placed the age limit unreasonably low.

Medical Practice Among the Maoris. Under this heading, John S. Reekie[2] writes an interesting letter from Auckland, New Zealand, giving the results of four years' personal observation in the capacity of native health officer among the Maoris. He says:

(1) Editorially in Jour. Am. Med. Assoc., April 6, 1907.
(2) Jour. Am. Med. Assoc., April 27, 1907.

"All forms of tuberculosis are widespread among them, and even in localities where the conditions are naturally almost ideal for coping with this disease, it is increasing in all its forms. The principal reason for this is their national custom of holding a 'tangi' over the dead. This consists of feasting and mourning of all the relatives of the deceased while the body lies in state, surrounded by weeping women and men who rub noses with one another, and cover and uncover the dead to show new arrivals. No matter what the nature of the disease, this custom is not interfered with. The police dare not interfere. I was once called on to perform an autopsy on a native who had died suddenly without any apparent reason, and when I arrived where the body was lying in state in a tent I was refused permission to do anything and it was only after the police had been called and the tent cleared that I could get to work. Half-way through, the relatives returned with reënforcements to drive away the desecrating 'pakeha tokuta' (whiteman doctor), and I had to be content with what I had done, especially as I had gone far enough to satisfy myself as to the cause of death. The result of this was that those natives had no use for me afterward. I was polluted and would pollute them if I touched them. It is not the policeman that the native child is threatened with as a last means of coercion, but the 'pakeha tokuta.'

"Once I was called in to a native hut to see a sick child, whom I found to be suffering from a psoas abscess. This I opened, and for want of anything better at hand, gathered the pus in some absorbent cotton, and as the best means of getting rid of it, I put it in the cooking stove fire. They took that stove out and would never use it again and not even the fireplace. It was 'tabu' ever afterward.

"But the serious part of it is that their superstitions have such a hold on them that any wandering Maori 'tohunga' (native doctor) who comes along with his incantations is allowed to take precedence and overrule the physician's authority and upset all his work. I once had as a patient a woman who was suffering from pneumonia. I rode many miles on horseback to see her, as I wished to reward the husband for his confidence in coming to me early and before he went to the Maori 'tohunga' (doctor). I stayed two days with the woman, and left her on the

road to recovery, and with every hope that she would recover. That night after I left she wanted to defecate, and could not be restrained from going to the customary place in the scrub a hundred feet or more from the house, although it was raining hard. She got rapidly worse and died. They will not permit this act in a dwelling, for if they do the dwelling is unclean and can no longer be used as a dwelling.

"Before the white man came it was the universal custom of the expectant mother to go off with the husband to a secluded place in the bush near a stream. After parturition, which was always accomplished in the squatting position with the husband clasping his wife's abdomen from behind and aiding the expulsion by squeezing, the woman would lie down in the running water and the husband knead her abdomen with his bare feet. The baby would be washed in the running stream, and all three would go back to the tent.

"Never have I seen a Maori woman lie down as do white women after confinement. They can not be kept down. They sit up almost immediately and next day may be seen hanging out clothes on the line or doing something else just as unexpected.

"In times past the Maoris, both male and female, bore pain with the utmost stoicism. I have opened a painful felon for a Maori maiden, who did not flinch any more than if I had only cut her nails, and who looked on at it all the time. But these individuals are rare now. One Maori came to me with a beautifully ripe boil on his wrist and told me that he wanted me to put something on it that would cure it at once. His friend who came as interpreter said he would not have it cut, and knowing the native character well, I simply replied that I would give it only one touch with a remedy that would cure it at once. They were pleased, and I made elaborate preparations to conceal my real intention, and at the crucial moment made a slash with my secreted knife. He instantly fled howling like a madman, and I have not seen him since, but fortunately the other native was in sympathy with my action and I did not lose their confidence (as I properly deserved to), as the touch did all I said it would.

"On another occasion I was called by an Irishman, who had married a full-blooded Maori woman, to come and attend his wife in confinement. She had been in labor for three days when he returned from a journey to find her surrounded by all the old Maori women in the district who had given up hope. When I arrived on the scene they had all fled, for they recognized me from afar. The Irishman, who had never attended an event like this before, although he had had fourteen children by this woman, was my only assistant. After really throwing the woman, for she resisted like a fiend, I applied the forceps. With the Irishman hanging on to her shoulders over the head of the bed, a baby was delivered of such dimensions that the father exclaimed when he saw it, 'Docther, that's a man child sure!'

"When a smallpox scare came on the country some four years ago, I was directed to vaccinate all the natives, both old and young, and strange to say, they took to this as ducks to water, and would arrive at my office or at the out-stations in large parties of thirty to a hundred or more. By selecting the youngest baby first and performing the act painlessly on him, I could do the rest, both old and young, without hearing a whimper, and that without any effort to do it painlessly, but rather with every effort to do it expeditiously.

"In the effort to get their names in order to record who had been vaccinated, I learned of a curious custom that prevails with them. One was named 'Four-o'clock.' He was so named when a baby because one of the family had been drowned at 4 o'clock in the afternoon. Another was named 'Glass,' because at the time he was being fitted with a name a relative died and the coffin maker had sprung an innovation on the natives in the shape of a glass window in the coffin lid. Another child was named 'Boots,' because a member of the family had died with his boots on. I could recite numberless instances of this primitive way of originating new names.

"The 'tohunga' is the medicine man of the Maoris and in him they have unshakable faith. The 'tohunga' makes most preposterous claims and has little difficulty in attracting a large following. I have known one to call himself Jesus Christ and to claim power to work miracles. He

had a cure-all which he compounded at the nearest saloon. It consisted of something out of every bottle or receptacle containing liquor—beer, gin, whisky, brandy—some of each brand. Sick natives at a distance would send him $200 and $300 to come and lay his hands on them. This he would do with great solemnity and much quoting of scripture, and afterward spend the evening with his disciples in the nearest billiard room, interspersing his conversation with lurid oaths in the distraction of an exciting game.

"One of these 'tohungas' once tore off the bandages and dressings I had placed on a badly burned limb and plastered it with the filthiest mud in the neighborhood. In spite of this the burn healed and he was given credit for the cure.

"Once a Maori gets it into his head that he is going to die no 'tohunga' nor the cleverest physician could save him, however easy the task. But once I knew of an old man whose relatives concluded he was about to die. They gathered all the tribe from far and near and much food and made every preparation for a glorious 'tangi.' He lay in his hut unconscious of all that was going on, but accidentally learned they had really begun a 'tangi' on his account. He said, 'I will arise and help them,' and he did. He had not made up his mind to die, and since all preparation had been made and everybody invited, it could not be put off. At these 'tangis' sometimes six or seven hundred people will assemble and eat and drink almost continuously for days until the last scrap has been swallowed. At one a year or two ago twenty sheep, thirty pigs, two cows, a ton of potatoes, a ton of kumaras (sweet potatoes), half a ton of flour and many tons of fruit and jam and other eatables were consumed. All the food is prepared in the native fashion—in a hole lined with hot stones. Meanwhile, the dead lies stinking right in the middle of this feasting.

"Like all superstitious peoples, they have a great horror of spirits, and I have yet to know the Maori who will venture alone in the dark. Some time ago a steamer, which had been chartered and loaded with 400 Chinese dead men who had been accumulating in New Zealand for some time, foundered off the coast near where I was stationed. Some of the boxes came ashore. One was found by a European

and Maori who were riding in company along the beach. They naturally supposed they had found something valuable and opened the outer and then the inner casing, when they came on the lead lining. The European then suspected what they had hold of and allowed the Maori to open the lead lining. He did so, and as soon as he saw the shriveled-up, parchment-like features of the dead Chinaman, he sprang aside, ran for his horse, mounted and galloped away. The beach is 70 miles long, and the European could see him riding for fully an hour as hard as he could make his horse go, and then he went out of sight. And yet the Maoris are brave and resourceful in danger. I have known them to exhibit courage equal in every degree to the best. They have great love for their children, but care little for their old people.

"In conclusion I will relate the experience I had with one of these medicolegal-clerico-schoolmasters. (I mean no reflection on them as a class.) About 70 miles from my station was a native school with about 90 children in attendance. Whooping cought was prevalent. This man did what he could, but was foolish enough to think he knew everything and refused the assistance I was authorized to proffer him. Everything went well until one day he bethought him to take the temperature of his charges. He only had an ordinary wall thermometer in a metal case. This he placed in the mouth of every youngster. It was quite a mouthful. He got an average temperature of 96 degrees. He became alarmed and rode some miles to wire to Wellington, the capital of the country, that a large number of children were in a very serious condition and to plead for help. I received an urgent message to travel fast to their aid. All the patients came out to greet me mostly clad in shirts and some were very short shirts. But for some severe coughing nothing seemed wrong, and, perplexed, I turned to the schoolmaster for an explanation. Well, it transpired that he had heard that no one could live long with a rise of temperature more than 7 or 8 degrees above normal, and he understood the normal temperature was 60 F. This man was called by the natives a 'pakeha Maori,' which has much the same meaning as does 'white trash' in some parts of the United States.

"Dr. Pomare, the chief native health officer, himself a half-caste and educated in Chicago, states that in thirty years there will not be a full-blooded Maori in existence. While they are building houses like those of the white man, they fail to ventilate or properly drain around them. They often live day and night in the same clothes, frequently allowing wet clothes to dry on their bodies. They alternately feast and starve. After a 'tangi' they will have little to eat sometimes for weeks together.

"The half-castes are mostly delicate, and tuberculosis is very prevalent among them. The pulmonary form is the most common. As they do not come under skilled care until well advanced, nothing can be done to check it, and they have lost faith in the ability of the 'pakeha tokuta' to do them any good."

Marriage Laws and Customs of the Australian Aborigines. Daisy N. Bates[1] describes the marriage laws and some peculiar customs of the West Australian aborigines. This race is fast becoming extinct by the introduction of civilization. Betrothals take place at a very early age. A child is frequently betrothed before it is born, and often to an elderly man, by whose wives the infant may occasionally be reared, growing up in her future husband's camp, and taking her place as his wife as soon as the age of puberty has been reached. In ordinary cases the father and mother rear the child, helped occasionally by presents of game, etc., from their future son-in-law, to whom the child is handed over at puberty. A young girl's "age of puberty" is determined when her first menstrual flux begins, or when the gentle swelling of the breasts takes place. This period may be about the tenth or eleventh year of the girl's life; it is difficult to judge the age of a young boy or girl; natives mature early in the tropical parts of Western Australia.

The women, young and old, are always isolated from the men during menstruation. If they are young wives and some of their old relatives are near, the young women join their camp. If, however, there are no old relations in camp, the woman makes a fire for herself apart from her husband and remains there until the flow has ceased. If

(1) Glasgow Med. Jour., May, 1907.

she is near the water she washes herself frequently. Men think their women unclean at this period, and as an instance of the intensity of feeling in this respect, the author has seen groups of natives camp out in the blazing sun in preference to camping under the shade of a eucalyptus tree, the only one near the water, because of the exudation of reddish gum which fell from its branches and which, to their minds, resembled the menstrual flux.

Marriage can be consummated after the first menstrual flux, or even before that, when the swelling of the breasts is noticed. The swelling of the breasts is always looked on as a sign that the girl is marriageable, and if her betrothed husband is in the vicinity he may cohabit with her then, or in the case of her having been reared in her promised husband's camp, she takes her place beside him as his wife. A man can marry two or three sisters if he is lucky enough to get them, and should dissensions occur amongst them he is at liberty to give one to a brother or to do what he likes with them.

Whatever may have been written to the contrary, there is a certain tribal morality existing amongst the aborigines. "Perforce" it may be, but anyone who knows anything of the native bush life will realize the impossibility of a young girl or woman successfully carrying out a love intrigue, and, when the wonderful gift for tracking is taken into account, the chances that a native woman has of escaping detection are infinitesimal. Nevertheless, intrigues are attempted, for man (and woman) is the same all the world over, but punishment always follows, unless the husband overlooks the offense "for a consideration."

It is against aboriginal law to tamper with a child until her first menstrual period has passed, or till her breasts begin to swell. Of course, there are low families and individuals with debased criminal tendencies amongst the natives, as amongst the whites, and in these families many breaches of aboriginal custom may occur, and the individuals, because of a certain prowess in hunting and fighting, may perform many and frightful excesses, but they are always killed in the end by the other members.

When a young girl has reached a marriageable age, and until she is claimed by her husband, she is in constant danger of being ravished by some member of her tribe, or by a

native or natives from a neighboring tribe, and she never leaves her camp without taking her wanna with her for protection. As a matter of fact, no girl or woman ever leaves camp without taking the thick root-digging wanna. Should a young girl be violently ravished by natives from a neighboring tribe, her brothers and uncles steal to the offenders' camp and ravish some of the female relatives there, or they may, perhaps, bring one or two women back with them. A fight ensues, in which the women are frequently killed, and a "vendetta," so to speak, is at once established, for "I kill and you kill," "I beat your wife, you beat mine," are two old southern sayings.

When a young girl is allotted to her husband, if he has other wives, she shares with them the common camp. If there are no other wives her mother assists her in making a new hut (of saplings, boughs and bark), and when it is finished a fire is lighted, and the mother returns to her own camp. A man may have any number of wives—as many as he can obtain and find food for. It is considered a great mark of prowess in hunting, etc., when a man can keep and feed five or six women and their offspring.

In the north the babies are carried in the yandees or wooden scoops; in the south they are usually carried horizontally across the back of the mother, with their heads and feet under each arm and their little stomachs pressed against the hollow of the mother's back. Infanticide is very prevalent in some districts. The author saw one woman who had killed and eaten the three of her own children.

There is a certain relationship existing in the state which precludes the possibility of a man having sexual intercourse or any intimacy with any woman who might ultimately become his mother-in-law. This relationship is called "tooa." Young married women are made "tooa" to certain boys by the relatives of both parties (for a tribe, however large, is a "family of relations"), and such boys become "tooa" to the young women. The boys are henceforth forbidden to speak to or even look at these women, and the latter are subject to a similar law with regard to the boys. When one of the women bears a girl child, such child, when old enough, is given to her "tooa," and if the young man has a sister he is supposed to give her to one of the woman's sons in exchange for his own wife. The woman may die before she

bears a daughter or she may be killed in some fight; hence more than one woman is "tooa" to the same man. On the other hand, one woman may be "tooa" to several men, so that if the first man dies before he can claim her daughter another of the men can claim her.

The single state or widowhood is unknown. Three days after her husband's death the woman goes to her husband's brothers or to her husband's nearest male relative. In their wild state the natives do not believe that sexual intercourse has anything to do with conception. The first "sickness" of a pregnant woman informs her of her condition, and whatever food she has eaten beforehand the "spirit" of that animal, bird or vegetable, as the case may be, is the giver of the child. At certain places spirit children dwell. These are forbidden spots, but if a woman wanted a baby she went to one of these "winytch" places and a spirit baby came to her, entering either through her mouth or through her navel.

A woman is not "taboo" during pregnancy, her husband continuing to have sexual intercourse with her until a short time before the birth of the infant. She is, however, "taboo" to him after the baby's birth for some two months or more. If a man breaks this law he is held in contempt and ridiculed by the other women, and very few natives will expose themselves to the ridicule of the women of their tribe. A woman is always "taboo" during menstruation.

Births are usually attended by one or two of the older women, but, except for some rough rubbing or massaging of the stomach, everything is left to nature. The woman in labor sits, or stands, or kneels, according to the degree of violence of the labor pains. Sometimes a birth has occurred when changing camp, the woman just turning aside into the bush, resting a couple of hours, and then resuming her march. Parturition is often assisted or hastened by means of a string tied tightly round the abdomen, an elderly woman rubbing the stomach of the prospective mother with the palms of her hands, and in a downward direction. The placenta is burned or buried, as time or convenience admits. The umbilical cord is severed with the nails of the mother or the attendant old woman, and is either fastened into a knot or tied with a piece of string spun from human hair or opossum fur.

Labor is often prolonged, and, particularly in the case of very young mothers, the labor pains are frequently very severe. With those young women on whom the operation of introcision or vulvotomy (?) has been performed, the labor pains are neither so prolonged nor so violent as in the case of the young coastal women who do not undergo any operation. Many of these have been known to have destroyed their babies immediately after birth, owing to the violent pains during parturition. Sometimes a little blood is pressed through the umbilical cord into the mouth of the newly-born baby. The infant, if it is alive, is rubbed over with powdered charcoal or the soft ash of certain woods, or dust is rubbed over its little body. It is then placed in the wooden scoop, which is the *vade mecum* of the northern women, or wrapped in a piece of prepared kangaroo skin by its southern mother.

The color of a new-born infant is a beautiful bronze or shining chocolate, which, after a few days, becomes somewhat cloudy and mottled. This, however, lasts but a few days, and after this, if the child is near water and is of cleanly habits, its skin retains its chocolate tinge and glistens in the sunlight like burnished bronze. The native mother never *washes* her child; it is "powdered" with charcoal and greased frequently, but it never has a bath until it is old enough to go into the water of its own accord. There is little, if any, change in the food of the mother, either directly before or after parturition. She may not eat much *flesh* food during this time, but if there is nothing else to eat, meat is partaken of. Native women have wonderful strength and endurance and great recuperative powers, and very rarely rest for longer than a few hours after the birth of a child.

The child is nursed for two or three years, sometimes longer, the unsuitability of the bush food as an infant diet rendering this course necessary. The northern women are quick to breed, but they have not the flow of milk which the average southern woman has; probably the better food and water supply of the south has to do with this.

Should another infant arrive while the suckling of the previous one is still in progress, the newly-arrived baby is generally killed, either by strangulation, by filling its mouth with sand, by knocking it on the head, or simply by leaving

it where it was "dropped." Infanticide was common amongst them, both from the above cause and also from the long and arduous journeys which had to be undertaken through dry country without water or food, when the carrying of a baby would be both inconvenient and troublesome. Sometimes, in the south, a baby's life would be spared through one of the mother's sisters or other relatives adopting it, the father and mother resigning all present and future claim to the baby.

Abortion was brought on among the natives by tying a cord made of spinifex grass tightly around the stomach of the pregnant woman, just above the navel. A female relative then pounded or kneaded the stomach for some time, and if this did not detach the fetus they sat heavily or even jumped on the stomach. The quick recovery which ensued shows their wonderful strength. Venereal diseases were not known among the natives before the introduction of civilization. At present they are quite common among native women in the civilized districts. Circumcision is performed at the age of puberty, which in a boy may be from fourteen to eighteen years. The preparations for this rite are on a lavish scale, as it is the first rite that admits the boy to manhood. Circumcision is performed with a sharp flint.

Two singular rites are practiced, the one on the male, the other on the female. These rites appear to have had a religious origin, but their significance seems to be now lost. The operation on the male, known as "subincision," results in an artificial opening of the urethra, similar to hypospadias, and a sort of expansion of the corpora cavernosa. The similar operation on the female, known as "introcision," or vulvotomy, consists of an enlargement of the vagina by means of a flint knife. It has been thought that these rites were practiced with a view to the prevention of impregnation, but there is abundant and incontestable evidence to the contrary.

At certain periods the natives gather together at a chosen spot for a festival, which appears to be a relic of some form of phallic worship. This festival sometimes lasts for weeks and "initiation ceremonies," "exchange and barter" and "friend adopting" are performed. The characteristic feature of these gatherings is promiscuous sexual intercourse, which the natives explain as being adopted because it cleanses the

breed, purifies the blood and prevents the effects of too much inbreeding.

The following are some of the native diseases prevalent: Eye troubles—caused by dirt, flies, smoke, etc. Blind natives are often met with, and it is not uncommon in the northwest to come on a poor little child whose eyes are being gradually eaten away by myriads of little "flesh flies." Inflammation of the eyes from one or other of these causes is frequent. The natives gain a little temporary relief by making their finger and thumb as hot as possible, and then pressing them on their eyes. Pneumonia is very prevalent in these days; but there were cases long before the advent of the whites.

Hemorrhage from the lungs (a painless hemorrhage always), the result of over-exercise at some of their special dances, invariably ended fatally. Cutaneous diseases, due to overfeeding, etc. Diarrhea, also from gorging at a feast. Colds. Headaches. Liver ailments.

Dysentery is usually treated by eating the gum from a certain species of eucalyptus, a remedy adopted by the early white settlers for the same disease. The antiseptic properties of banksia and other wood ashes were known to the natives, who applied the ashes on festered wounds, boils, etc. For headache, a band of bark is fastened tightly round the head, and blood-letting by "hitting on the head" is practiced for relief. Native doctors sometimes bleed patients by making an incision near the temple or on the arm. Sometimes a woman asks a friend to knock her on the head and so cure her pain. For toothache they make an opening in the jaw (in case of abscess) just below the affected part.

Deleterious Effects of Iron. M. Morgenstern[1] concludes as follows, from an investigation of the action of various iron preparations on the teeth: Both the artificial iron preparations and the natural iron waters, with few exceptions, exert an injurious action on the teeth, discoloring and corroding them on contact. The coloration is due to a compound of iron produced by the solution of some of the tooth substance by acid action of the salt, which is either combined with the iron or mixed with it in the case of the natural iron waters. The well-known precaution to take

(1) Therap. Monatshef., March, 1907.

iron solutions through a glass tube is fully justified, and even iron preparations in the form of pills and powders should always be enclosed in gelatin capsules.

Iron excreted in the saliva after taking as medicine does no harm to the teeth, as it cannot alter the alkalin reaction of the saliva and is combined either with epithelium or albuminates in such a way that it can have no corrosive action. It would be desirable to test all iron preparations in this respect and publish the results for the benefit and guidance of the public, as well as physicians and druggists.

PATHOLOGY, BACTERIOLOGY AND PHYSIOLOGY.

BY

W. A. EVANS, M. S., M. D.

SECTION III.

PATHOLOGY

LABORATORY DIAGNOSIS AND TECHNIC.

Diagnosis of Typhoid Fever. Blum[1] writes that he had decidedly favorable results with "hemoculture," in a larger proportion of cases and at an earlier period than with any other diagnostic method. Conradi[2] announces that an early diagnosis of typhoid fever can be made from the smallest amount of blood available for the agglutination test. The serum can be utilized for the agglutination test, and will be found sterile, as the typhoid bacilli present are caught in the fibrin in the test of the blood. Experiments with blood from 60 typhoid patients showed the presence of the bacilli in the coagulum from amounts of blood ranging between 0.05 and 0.2 c.c. The little thread of coagulum is extracted from the capillary tube with forceps and transferred to a test tube containing 5 c.c. of beef bile, with 10 per cent. peptone and 10 per cent. glycerin. The tube is then incubated from 12 to 16 hours. It is then well shaken and 0.1 and 1 c.c. of the contents are spread out with a glass spatula on dried plates of litmus-milk or sugar agar. In 24 of the 60 cases positive cultures were obtained on the plates, that is, in 40 per cent. Restricting the figures to the patients in the first and second week of the disease, the proportion was 50 per cent.

Epstein,[3] in writing on the use of *Ammonium oxalate in blood culture technic,* says about 10 c.c. of blood is with-

(1) Lemaine Méd., xxvii, No. 37.
(2) Münch. med. Woch., liii, No. 49.
(3) Am. Jour. Med. Sciences, September, 1907.

drawn and introduced into a tube containing 10 c.c. sterilized ammonium oxalate saline solution, made up as follows: Sod. chlorid, 6 gm.; ammon. oxalate, 2 gm.; distilled water, 1000 c.c.

The mixture of blood and salt solution is shaken thoroughly. The blood remains fluid and can be taken to the laboratory and treated according to any of the methods suggested for blood culture work. In 78 cases where this method was employed the results were the same as in the controls.

Agglutinating Test in Typhoid. The microscopic agglutination of the typhoid bacilli as a diagnostic test for the general practitioner is discussed by Stober[1] and details are given. An emulsion of typhoid bacilli is used consisting of a suspension of agar cultures of highly agglutinable typhoid bacilli in a 1 per cent. salt solution to which is added .6 per cent. of formalin. The turbidity index which is representative of the number of organisms present corresponds to the opacity of a mixture of one part of tincture of benzoin in approximately 15,000 parts of water. In rapidity of agglutination and reliability of results, this emulsion equals and, with many serums, surpasses the preparations now on the market, including the much discussed Ficker "Typhus Diagnosticum," a secret preparation which has been so favorably received in Europe.

To 1 c.c. of the emulsion in a 4 c.c. test tube there is added an equal quantity of distilled water containing a stated amount of blood or serum. The tube is then corked and inverted a few times to insure mixing of its contents. The first change observed in the mixture is an increased turbidity, due to the formation of minute flocculi or clumps. These increase in size, causing a transition from a finely granular to a coarsely granular appearance. As the flocculi become larger they become more and more distinct until they slowly settle to the bottom as a white precipitate, leaving the supernatant fluid clear. The above is a description of a typical complete reaction, but in cases where the agglutinins are insufficient the reaction may not proceed beyond the formation of flocculi, or, if precipitation does occur, the supernatant fluid remains slightly

(1) Ill. Med. Jour., x, p. 471.

turbid. Such an incomplete reaction may be considered highly significant of the presence of agglutinins, but repeated tests should be made from day to day until a complete reaction occurs.

In numerous experiments it has been observed that slight continuous agitation serves to increase or hasten the formation of flocculi, but prevents the complete precipitation of the same. This fact suggests that placing the tubes in the packet where they are convenient for observation really enhances the reaction. Complete precipitation can be obtained by allowing the tubes to stand for a short time. The advantages of this reaction over the microscopic test are obvious. The latter necessitates the possession of a microscope, a fresh bouillon culture of typhoid bacilli, repeated observations and a familiarity with a rather tedious technic. In this test, the dilution and admixture of serum and emulsion can be done at the bedside, the tubes placed in the pocket and observations made during leisure moments. In point of delicacy, most cases of typhoid fever will show formation of flocculi with the macroscopic almost as quickly as with the microscopic test, although early in the disease cases are met with in which the agglutinins of the blood are present in such small quantities that the clumps formed are recognizable only with the microscope.

Sputum Spreads. Goodman[1] describes a new method for the spreading of sputum preparatory to microscopic examination, as a substitute for the old method of spreading between two plates of glass. A Petri dish cover is used as a receptacle for the sputum, and the latter is spread out by using the bottom of the dish as a top glass. In this way the sputum is easily manipulated on the stage of the microscope after removing the clamps, and can be examined for cellular elements, spirals, crystals and other constituents.

The Blood.

Blood Examinations. Schottelius[2] gives an illustration of a convenient little instrument for obtaining a drop of blood. Two metal rings fit on the tips of thumb and forefinger.

(1) Jour. Am. Med. Assoc., xlviii, p. 2187.
(2) Münch. med. Woch., xliv, No. 10.

Each ring is shaped like a broad signet ring, but one has a slit, in which works a small triangular knife on a spring, Holding the lobe of the ear between the thumb and forefinger, pressure on the knife makes the desired little incision, and the ear is at once released. This can be done without attracting the patient's attention.

Hemocytometer Fluid. Edington[1] recommends the following new fluid for the hemocytometer: Neutral sodium citrate, 7.5 gm.; formalin, 2 c.c.; dahlia (Grübler), 0.03 gm.; chloroform, 5 drops; distilled water, 250 c.c. After standing 2 or 3 days the solution is filtered.

Blood Alkalinity. A clinical method for determining the alkalinity of the blood is described by Adler.[2] Rosolic acid is used which is orange-yellow in the presence of acid and red in the presence of alkali. Ash-free filter paper is soaked in an alcoholic solution of rosolic acid and hung up in the air to dry, when it becomes a delicate salmon pink. The serum is obtained from the blood collected in capillary tubes and centrifugalized, after clotting. Normal serum produces a strongly marked red color which contrasts well with the unchanged parts of the paper. The changes are well marked and intermediate shades are easily distinguished.

The Urine.

Urine Examination. Under the subject of urine examination Labbé and Labb[3] recommend a test ration for the study of urinary elimination, to be followed for 3 successive days. The diversified diet is composed about equally of meat and vegetables, a total of 80 gm. of albumin. The particulars are given in detail. They are cooked entirely without salt, and the patient is given 12 gm. of salt, which he consumes at will during the 24 hours. The tabulated findings show a constant physiologic average of elimination in health, with characteristic curves in various affections.

Esbach's Test Complicated by Kreatinin. Incomplete precipitation of albumin in Esbach's test was found in a case of typhoid fever by Calvert.[4] A very large amount

(1) Lancet, July 13, 1907.
(2) Jour. Am. Med. Assoc., xlix, p. 461.
(3) Presse Méd., xv, No. 71.
(4) Jour. Am. Med. Assoc., xlix, p. 245.

of kreatinin was present. This gives, with picric acid, in an acid solution, a yellow precipitate which remains in suspension a long time.

Albuminosuria. Giovine[1] has tested the urine for albuminosuria in infectious diseases and finds it a rather frequent symptom. He found it present in 68 per cent. of cases examined, and it was marked in 23 per cent. Its constancy in diphtheria, and its presence in typhoid fevers of intestinal intoxication, were notable, while its absence in pulmonary tuberculosis even with large cavities was also of interest.

Euglobin Elimination. The elimination of euglobin in 11 cases of amyloid affections is pointed out by Zak and Necker[2] as a valuable aid in the differentiation of amyloidosis. They describe the technic for its determination.

New Sugar Test. A new test for sugar described by Fenton[3] is said to be sufficiently delicate to detect 0.2 per cent. The test is most conveniently applied in the following manner: Pour a small quantity (4 or 5 c.c.) of the liquid on to an excess of solid anhydrous calcium chlorid so as to form a semisolid, or pasty, mass. Add to this 10 c.c. of toluene containing two or three drops of phosphorous tribromid and then carefully boil the mixture for a few minutes, bearing in mind the inflammable nature of toluene. Pour off the toluene solution and, after cooling, add to it about 1 c.c. of malonic ester and a little alcohol. On neutralizing the mixture by adding alcoholic potash, drop by drop, a characteristic pink color will usually be observed. The mixture is now considerably diluted with alcohol and a few drops of water when, if sugar was originally present, the solution will exhibit a beautiful blue fluorescence. The reaction appears to be a specific one for carbohydrates which contain six or more atoms of carbon in the molecule and may therefore be used to distinguish hexoses from pentoses or other lower sugars.

Grunewald[4] describes a technic with which he says even traces of the various sugars in the urine can be detected

(1) Gaz. d. Ospedal., Minal, xxviii., Nos. 85-89.
(2) Deutsch. Archiv. f. klin. Med., lxxxviii, Nos. 4-6.
(3) Lancet, Jan. 26, 1907.
(4) Münch. med. Woch., liv, No. 15.

and differentiated. The method is necessarily complicated and of not much value for the general practitioner.

Christian[1] reviews his results on *testing diabetic urine for sugar* by means of Fehling's method, the polariscope, and the fermentation-specific-gravity method. He thinks the last named is the simplest for the general practitioner because it requires no laboratory and needs only a bit of yeast from the kitchen, and the urinometer, which every physician has. Furthermore it is sufficiently accurate for making a quantitative estimation of glucose in the urine.

Bang[2] makes high claims for the convenience, extreme precision and rapidity of the *simple test for sugar* which he describes. The method is accurate for very small amounts, and is not affected by the presence of albumin. Instead of caustic alkali he uses potassium carbonate in the solution of copper, and titrates with hydroxylamin until the blue tint vanishes. Potassium sulpho-cyanate is mixed with both solutions.

Experimental Glycosuria. The results of Macleod's[3] are summarized as follows:

1. On dogs rendered glycosuric by stimulation of the central end of the vagus, nicotin injections sufficient to cause blocking of the vagus produce a distinct fall in the amount of sugar in the blood.

2. Hemorrhage sufficient to lower the arterial pressure to about 50 mm. of mercury, instead of causing a diminution in the percentage of blood-sugar, causes a distinct increase. This increase is less marked when asphyxia is guarded against by oxygen inhalations.

3. Stimulation of the peripheral end of the splanchnic nerves, or of the spinal cord below the fifth dorsal roots, causes no increase in the percentage of sugar in the blood.

Alimentary Levulosuria. Levulosuria in liver affections is considered by Chiadini,[4] who concludes that a reliable test is afforded by the administration of 50 gm. of levulose after fasting. If the liver is intact no glycosuria will result, but levulosuria will be observed in case of pathologic conditions of the liver.

(1) Boston Med. and Surg. Jour., Aug. 8, 1907.
(2) Berlin klin. Woch., xliv, No. 7.
(3) British Med. Jour., Dec. 22, 1906.
(4) Gaz. d. Ospedal., Minal, xxviii., Nos. 12-18.

Diazo Reaction in Tuberculosis. Williams[1] comments on the prognostic significance of the Diazo reaction in tuberculosis. He says that the presence of the reaction in white patients indicates an unfavorable prognosis, while in the colored race it has no significance.

The Semen.

Barberio's Reaction for Semen. J. B. Levison[2] reports some investigations with this test for semen which he finds to be specific for human semen, as the reaction is not given by the semen of other animals which have been so far investigated. The presence of spermatozoa is not necessary for the reaction. Spots of semen which have been dried or semen which has been preserved for a long time by means of wood alcohol, alcohol, ether, toluol, formalin or chloroform still give the reaction. The test is performed as follows: If to the semen, or a concentrated watery solution of it, picric acid is added, needle-shaped rombic yellow crystals precipitate. As a reagent a saturated, watery or alcoholic solution of picric acid or Esbach's reagent may be used. The saturated solution of picric acid in glycerin recommended by Cevidalli precipitates so much picric acid on standing as to become inactive. The reaction appears to be due to some peculiar substance contained in the serum and it has been suggested that protamin is the substance which produces the reaction. A very interesting question is what organ gives rise to this substance. The author has made some experiments which indicate that the prostate is wholly or chiefly responsible for the production of the reaction.

SERO-PATHOLOGY AND SERUM DIAGNOSIS.

Opsonins.

Their Existence and Relations. The subject of opsonins and the opsonic index in medicine has received a great deal of attention from various experimenters and clinicians and our knowledge is sufficiently advanced so that a comprehensive statement of the opsonic theory may be attempted.

(1) Med. Record, March 23, 1907.
(2) Berlin klin. Woch., Oct. 8, 1906.

The facts on which the assumption of the existence of opsonins and their relation to the course of infectious diseases appear to be substantially as follows:

Phagocytosis is one of the means by which the system rids itself of bacteria which have invaded the tissues. The leucocytes are able to attack the bacteria with greater vigor in certain cases than in others. In such cases the outcome of the infection is likely to be favorable to the organism while if the phagocytes do not readily seize the leucocytes the latter are apt to overcome the defensive forces of the body and the organism will succumb. The reason for the marked phagocytic power in these cases does not reside in the leucocytes but in the blood serum. It is not exercised on the leucocytes, but on the bacteria. If the bacteria which have escaped the leucocytes in a certain case be treated with the serum of another individual phagocytosis will readily occur, showing that the power to consume the germs depends on the effect of some element of the serum on the bacteria. The hypothetical substance or substances which bring about this change in the bacteria by which they become suitable food for the phagocytes has been termed opsonin or opsonins, from the Greek *Opsono*: I prepare food for.

Their Nature. Some conclusions as to the nature of opsonins have been drawn by Potter,[1] Ditman,[1] and Bradley,[1] who state that opsonins are distinct from amboceptors as shown by the fact that the opsonin for anthrax bacilli is destroyed by heating at 60° C. (140° F.) for thirty minutes while the amboceptor is not destroyed by the same treatment. Whether there exist stimulins acting on the phagocytes as well as opsonins is not satisfactorily determined. Opsonins are destroyed by heat; they are also destroyed in the serum if kept three days at 37° C. (98.6° F.) but persist for ten days practically unchanged if kept at 2° C. (35.6° F.). A temperature of above 50° C. (122° F.) is needed to effect any considerable diminution of opsonic power in the serum. The opsonins of immune serum are more resistant to heat than those of normal serum. The opsonic index varies inversely with dilution. The opsonic action of serum may be diminished or inhibited by solu-

(1) Jour. Am. Med. Assoc., Nov. 24-Dec. 1, 1906.

tions, isotonic with serum, of $CaCl_2$, $BaCl_2$, $SrCl_2$, K_2SO_4, $NaHCO_2$, sodium citrate, sodium oxalate, potassium ferrocyanid, formalin, lactic acid, and chloroform. Simon,[1] Lamar,[1] and Bispham[1] conclude that opsonins are an essential constituent of the blood, that they are allied to the globulins, that they are non-dyalizable, and that they are not specific.

Combining Properties. R. Muir[2] and W. B. M. Martin[2] have investigated the combining properties of the opsonins of normal serum and arrive at the following general result: Having tested the three chief varieties of immune bodies (amboceptor), namely those obtained by the injection of (a) red corpuscles, (b) serum, and (c) bacteria, respectively, they found that in each case the combination of receptor and immune body removes the opsonin of normal serum as tested by an emulsion of *Staphylococcus aureus.* A bacterium treated with immune body takes up more of the normal opsonin than the same bacterium untreated. If a complement is defined from the chemical point of view it is evident that the thermolabile opsonins of normal serum belong to the group of complements. The authors found a striking resemblance, in the diminution of hemolytic, bactericidal and opsonic action produced by the different methods of absorption, but at present pronounced no opinion as to the identity of or non-identity of the substances producing these effects.

The relation of opsonins to the course of infectious diseases has been investigated by Wright,[3] who describes the different phases of chronic infections in which when the content of opsonins, or the opsonic index, is below the normal the disease makes progress because the system has not power to oppose the action of the bacteria and their toxins. The effect of the entrance of toxins into the blood is temporarily to depress the defensive powers of the system, with lowering of the opsonic index. This phase is followed in normal cases by an increased production of opsonins and a rise in the opsonic index. This action is accompanied by the disappearance of bacteria from the

(1) Jour. Experimental Med., December, 1906.
(2) British Med. Jour., Dec. 22, 1906.
(3) Jour. Am. Med. Assoc., Sept. 1, 1906.

blood in consequence of the increased phagocytosis made possible. A continuation of this action results in the destruction of the focus of disease.

Pneumococcal Opsonins. Rosenow[1] shows that human serum retains its opsonic power after filtration through porcelain. The results of his absorption experiments indicate that human serum contains several opsonins with specific affinities for pneumococci, streptococci, staptlococci and tubercle bacilli. While avirulent pneumococci absorb opsonin and are rendered susceptible to phogocytosis, pneumococci that are virulent for rabbits do not absorb opsonin and are unsusceptible to phagocytosis, and these properties may be diminished or increased by passage through rabbits or cultivation on artificial media. Extraction, or autolysis, of virulent pneumococci in salt solution brings into solution a substance which inhibits the action of pneumococco-opsonin. Virulent pneumococci take up this substance and become resistant to phagocytosis at the same time as they show some degree of animal virulence, while after extraction virulent pneumococci acquire the power to absorb pneumococco-opsonin. It thus seems possible to extract from virulent pneumococci a substance on which virulence seems to depend and for this substance the name "virulin" is suggested.

Opsonins in Scarlet Fever. Tunicliff[1] found the *streptococco-opsonic index in scarlet fever* below normal at the beginning of the disease in a majority of the cases. It rises above normal as the acute symptoms subside, but soon, and often quite abruptly, it returns to normal again. In infected cases it commonly remains at or near normal during convalescence. Definite local streptococcal complications are inaugurated by a depression in the index, which rises again as improvement takes place.

Banks,[2] in a study of the same subject, arrived at practically the same results. In addition, he observed the streptococcic opsonic power decreased at the onset and during the earlier period of albuminuria, severe nephritis and secondary adenitis. As convalescence is established the quantity of opsonins again increased. From this he is led to believe

(1) Jour. Infect. Dis., June 15, 1907.
(2) Jour. Path. and Bact., October, 1907.

that nephritis is due mainly, if not entirely, to streptococcal invasion of the kidney.

Opie[1] finds that inflammatory exudates commonly are devoid of opsonins, even when produced by sterile irritants. He suggests that probably the normal opsonins are absorbed not only by micro-organisms, but also by cells in the exudate.

Opsonins in Infancy. S. Amberg[2] has investigated the opsonic content of infant's blood and reaches the following conclusions:

1. The opsonic content of the infant's blood does not seem to follow the rules laid down by Moro for the bactericidal power of the blood.

2. The average values for the opsonic content of the infant's blood exceed those laid down by Simon for normal adults.

3. A distinct advantage seems to exist in favor of the breast-fed infant. This advantage does not seem to be dependent as much on the breast feeding as such, but it seems to be dependent to some extent on the state of the nutrition of the infant and perhaps on the constitution.

Opsonins in Milk. Sims Woodhead and Mitchell[3] found that the tuberculo-opsonic index of milk was somewhat lower than that of the blood, the mean or average results being 0.8 in the case of blood and 0.6 in the case of milk, for healthy cows. In a cow that had reacted to tuberculin the index was 0.48, and in a "coughing cow," not thus tested, the index was 0.44. They also found that whey, prepared by the addition of either rennet or hydrochloric acid, contained even more opsonin than an equal volume of the milk itself.

Specificity of Opsonins. From studies on the specificity of opsonins in normal and immune serum Russell[4] draws the following conclusions:

1. After injection of bacterial vaccines, the increase of opsonins is probably due to the formation of immune opsonins which react specifically.

2. In saturation experiments of normal serum we are

(1) Jour. Exp. Med., Sept. 21, 1907.
(2) Jour. Am. Med. Assoc., xlviii, p. 305.
(3) Jour. Path. and Bact., January, 1907.
(4) Bull. of Johns Hopkins Hospital, June, 1907.

dealing with normal or common opsonins, and these are not specific, since they can be removed by saturation with any one of a considerable number of bodies.

3. In saturation experiments with immune serum, we have both the immune and the common opsonin present.

4. *B. pyocyaneus* is susceptible to spontaneous phagocytosis

Simon[1] also holds that the opsonins of normal blood serum are not specific, but that those in immune serum are probably specific.

Opsonic Index. The opsonic index is a representation of the relative amount of opsonins in the blood compared with the amount in normal blood as indicated by the average number of bacteria swallowed by the leucocyte under the action of the serum to be tested as compared with the number consumed by leucocytes under the influence of normal serum. The method of determining the opsonic index has been described previously in this series.

Thomas[2] writes on *the variability and unreliability in the determination of the opsonic index,* as follows: Opsonic indices dependent on the supernatant suspension of bacteria following mere centrifugalization and the bacterial suspensions obtained with McFarland's "nephelometer" are fallacious. For a certain time phagocytosis is directly proportional to the period of incubation. After this time, degeneration of the leucocytes renders a trustworthy determination of phagocytosis impossible. Spontaneous phagocytosis, or mere adhesion of bacteria to leucocytes, may be a factor in the production of erroneous opsonic indices.

Not fewer than 100 leucocytes should be counted, and these enumerations should include large lymphocytes and transitionals. Aging of bacterial cultures from 6 to 24 hours seems not to affect, materially, the phagocytic index. The question of the personal equation involved is so serious as practically to nullify the value of the method in most instances. Simon's percentage index is apparently of more value than Wright's phagocytic index. The experiences of the majority of observers indicate that the diagnostic value of the index is minimal, but that prognostically some utility attaches to it, especially in the field of tuberculosis.

(1) Jour. of Exp. Med., Sept. 21, 1907.
(2) Jour. Am. Med. Assoc., XLIX, p. 1219.

In the heralded, unlimited field of therapy, where the opsonic index is ordained to play a star rôle, its utility seems destined to pass into oblivion, not only because of its inconstancy, in agreement with the clinical symptoms, but especially because of its impracticability.

Noguchi's[1] research *on the influence of reaction and desiccation* helps to explain some of these discrepancies. He found that opsonins act best in neutral medium. No opsonification occurs in a serum the alkalinity of which corresponds to more than 1.6 c.c. of 1/20 N solution or acid more than 5 c.c. of this concentration per 1 c.c. serum. The opsonic index obtained with a native serum can not be regarded as the expression of the action of all the opsonin, but only of so much as the degree of optimum of reaction permits to act; hence estimation of opsonic power in order to indicate as accurately as possible the exact amount of opsonin present should be made in neutral medium and with diluted serum. All serum increases in opsonic power on diminution of original alkalinity. Opsonins whose action is suspended by unsuitable reaction become active again if the reaction is brought to neutral unless the acid or alkali used approaches the strength of 1 N, when the alteration in the opsonin becomes permanent. Alcohol or dehydration robs serum of its opsonin. Serum remains practically unaltered in opsonic power on desiccation at 23 C., and in a dry state opsonins are preserved for at least two years. In this state they resist temperature up to 150 C., regaining their original thermolability when dissolved in the proper amount of water. These characteristics of opsonins correspond to properties peculiar to ferments.

Phagocytosis in Relation to Opsonic Index. Walker[2] calls attention to the phenomena of phagocytosis in relation to erroneous opsonic index determinations. He insists that lack of knowledge of the principles governing this phenomenon causes more errors than failure to follow the technical rules. The method usually employed, of diluting the bacterial suspensions to the degree required for reducing the phagocytic index to an average that can be

(1) Jour. Exp. Med., July 17, 1907.
(2) Jour. Med. Research, July, 1907.

readily and quickly counted, can not give any true indication of the relative opsonic value of the sera tested. If the bacterial suspension contains fewer germs than the opsonin of either serum is able to sensitize, the result should be that each will sensitize all the bacteria present and equal phagocytic indices will be observed. In such a case, the opsonic index obtained will be unity, regardless of the real difference between the sera. If all the opsonin of the weaker serum finds bacterial attachment, but if too few bacteria are introduced to combine with all the opsonin in the stronger serum, an error, depending on the quantity of opsonin not combined, will result. The method of the technic recommended by Walker is to dilute the sera from ten to twenty-five times in one of the tubes described by Wright for making higher dilutions at a single step and to use the diluted serum with a very opaque suspension of staphylococci. The principle of using enough bacteria to produce the maximum phagocytosis of which the serum is capable applies to all bacteria that are rapidly sensitized. For species for which but little opsonin exists in the blood, e. g., typhoid bacillus, comparatively fewer germs are necessary and the serum need not be diluted.

Isoagglutination and Opsonic Determination. Ludvig Hektoen[1] defines the isoagglutination of human corpuscles to mean the clumping of the corpuscles of one person by the serum of another person. Its occurrence is demonstrated readily by incubating for one or two hours mixtures of defibrinated or citrated blood or of corpuscles and serum. It is often seen in opsonic work in which serum generally constitutes one-third of the mixtures.

It has been shown that individuals may be separated into three groups by means of isoagglutination, namely: (1) Those whose corpuscles are not agglutinated by the sera of Groups II and III but whose sera agglutinate the corpuscles of Groups II and III; (2) those whose corpuscles are agglutinated by the sera of Group III (and Group I) and whose sera agglutinate the corpuscles of Group III; (3) those whose corpuscles are agglutinated by the sera of Group II (and Group I) and whose sera agglutinate the corpuscles of Group II. The amount of

(1) Jour. Am. Med. Assoc., XLVIII, p. 1789.

agglutinin varies considerably in sera from different persons, and corpuscles of the same group vary in their agglutinability by the same serum; furthermore, sera of Group I may contain different amounts of agglutinins for Groups II and III. Human agglutinins are stable bodies; they resist heating to 60° C. for thirty minutes, pass through porcelain filters, and persist for months in serum kept in the icebox. They are distinct from the isohemopsonins in human serum.

From the practical point of view isoagglutination of human corpuscles is of immediate interest in connection with the determination of the opsonic index and with transfusion of blood. All who have worked with the opsonic index are familiar with the fact that occasionally their mixtures show marked clumping of the erythrocytes which naturally interferes more or less with the desired accuracy. In order to avoid this annoyance the washed blood (leucocytes) should be secured from an individual of Group I, i. e., from one whose corpuscles are not agglutinable. Hence it is well to determine the isoagglutinative grouping of the regular frequenters of a laboratory that are likely to be asked to furnish blood for this purpose.

By means of a refined technic Crile recently transfused blood from normal to diseased human beings, and with apparent success. The occurrence of isoagglutinins in human blood suggests that under special conditions homologous transfusion might prove dangerous by leading to erythrocytic agglutination within the vessels of the subject transfused. It has not been possible to conduct animal experiments on this point because of failure to demonstrate isoagglutinins in the serum of suitable animals. It may be pointed out, however, that the possible danger here indicated can be avoided by the selection of a donor whose corpuscles are not agglutinated by the serum of the recipient and whose serum does not agglutinate the corpuscles of the latter; that is to say, donor and recipient should belong to the same group and preferably to Group I or II. The actual isoagglutinative relation of the donor and the recipient are readily determinable in a short time in the manner already outlined.

C. E. Simon[1] proposes to adopt the *percentage of phagocyting leucocytes* as the expression of the opsonic content of the blood and recommends that even when Wright's method is used the percentage of leucocytes containing bacteria be also determined. This method he believes to be more accurate than the counting of the bacteria taken up by the cells. Both methods may sometimes give fallacious results if the blood be undiluted. He therefore recommends diluting the blood 1 to 20 or even 1 to 40.

According to the experiments of Knorr[2] *serum loses one-half of its opsonic power* in 24 hours; after this there is no further loss in the following 24 hours. The value then rapidly drops, but does not wholly disappear until after 5 days. Boiling thymol and chloroform seem to have no effect on the opsonic values, but lysol seems to produce a decrease. The best period for incubation is one hour, when the phagocytosis has reached its maximum, but after that time the disintegration of the leucocytes is apt to lead to difficulty in counting them. The ageing of the culture of the bacteria does not lead to a drop in the phagocytic or percentage index. Only fresh corpuscles can be used in opsonic work; after six hours many of the cells are dead and fallacious results are obtained if such cells are used. With weak emulsions the chances of error are greater than with the stronger emulsions, bearing in mind that with too rich emulsions counting becomes difficult, if not impossible. The author considers Simon's index preferable to Wright's.

Vaccine Therapy. The *Journal of the American Medical Association* says editorially that it is evident that vaccine therapy must be delegated to especially trained persons with adequate facilities such as may be supplied in connection with laboratories. Already a number of special services of this kind have been established in this country, and it is by the accumulation of a substantial body of facts through the painstaking and discriminative observations by competent persons in various places that the more precise field of usefulness of vaccine therapy and the best mode of its practical application within that field will eventually be determined.

(1) Jour. Am. Med. Assoc., Jan. 12, 1907.
(2) Jour. Am. Med. Assoc., April 13, 1907.

The value of the opsonic index in diagnosis cannot be very great as in any disease it may sometimes be below and sometimes above the normal according to the resisting power of the organism affected. Nevertheless some authors have reported results sustaining their belief that it may be of service in the diagnosis of tuberculosis.

The employment of this index as a guide to the propriety of treatment and as to the effect of any treatment designed to raise the immunizing and bactericidal power of the blood serum is the most important application of the opsonic theory. The principles under which it is to be used for this purpose have been admirably worked out by Wright. Several authors have reported results in the treatment of pulmonary tuberculosis in which tuberculin was used guided by the changes in the opsonic index. In such cases the second injection of tuberculin must be deferred until the index has risen to or above the point at which it stood before the first injection; in other words, until the negative phase has disappeared. Pottenger[1] emphasizes its usefulness in guiding the administration of tuberculin.

Rotch and Floyd[2] conclude that the opsonic index may be of great value in the early recognition of tuberculosis, especially when tuberculin cannot be given. They found that when the tuberculo-opsonic index is constantly high, tuberculosis is practically always present. A fluctuating index they also consider of great diagnostic value. The use of the opsonic index may give some indication for the control of the dose of tuberculin, used for diagnostic as well as for its therapeutic effects.

Kellogg[3] found the cases thus far specifically affected by treatment based on the opsonic index are those of bone and joint tuberculosis, tuberculosis of glands and subcutaneous tissues and genitourinary tuberculosis—hence the localized forms, and not tuberculosis of the lung.

(1) Jour. Am. Med. Assoc., XLVIII, p. 1570.
(2) Jour. Am. Med. Assoc., XLIX, p. 633.
(3) Northwest Med., January, 1907.

BACTERIOLOGY.

General Technic.

Staining Methods. Improved staining methods are described very extensively in the special periodicals. Loeffler[1] has found that by slightly modifying and boiling the Giemsa stain it is possible to show up the bacteria, the pale spirochete and the other microörganisms within a few minutes. He has been successful with this improved technic in demonstrating the germ of foot and mouth disease, which is so small that it passes through filters. The specimens must be thin and fixed in ether-alcohol. They are then treated with four solutions: 1. A 0.5 per cent. solution of malachite green crystals with zinc chlorid. 2. A 0.5 per cent. solution of sodium arseniate. 3. A 0.5 per cent. solution of pure glycerin. 4. With the Giemsa stain. Three drops of the arsenic solution and one drop of the malachite green solution are applied and allowed to remain in contact for 1 minute. The specimen is then rinsed. Five c.c. of glycerin solution are poured into a test-tube and from 5 to 10 drops of the Giemsa stain are added. This mixture is then heated to a boiling point over a flame and poured hot over the specimen, where it is left for from 5 to 10 minutes, then poured off and the specimen thoroughly rinsed in running water.

The gonococci he decolors with a mixture of 177 parts alcohol, 20 parts of a 1/10 per cent. solution of bromeosin and 3 parts acetic acid. This draws the stain out of the nuclei of the cells, but not out of the gonococci, which take and keep the stain so intensely that they show well even under a low power microscope.

Duval[2] gives a method of differentiating, in sections of

(1) Deutsch. med. Woch., xxxiii, 5.
(2) Jour. Exp. Med., ix, p. 381.

tissue, bacteria decolorized by Gram's stain. The staining solution is a modification of the Leischman-Wright solution. The ordinary Leischman stain, and the various modifications, will not give color differentiation to the tissues. The summary of the steps is given as follows:

1. Fix the tissues in methyl alcohol or Zenker's Fluid and embed in paraffin.

2. Treat sections in the usual way to remove the paraffin, and place in 95 per cent. methyl alcohol.

3. Remove slide from the alcohol, and cover evenly with the staining solution. This is prepared by dissolving 0.5 gm. of sodium carbonate in 100 c.c. of hot distilled water and while hot, add 1 gm. Grübler's methylen blue. The mixture is now steamed in a flask over a water-bath until a distinct metallic luster is formed on the surface which usually appears in from 20 to 30 minutes. The solution is now cooled and 900 c.c. of a 0.25 per cent. aqueous solution of Grübler's eosin is added slowly, the flask being thoroughly shaken after each addition. Finally the precipitate that forms is collected on a filter paper and dried in the incubator at 55° C. Dissolve 1 gm. of the dry precipitate in 100 c.c. of 0.5 saturated alcoholic (methyl) solution of eosin.

4. Add to the stain covered slide an equal quantity of distilled water and allow it to stand in the mixture for from 15 to 30 minutes.

5. Pour off excess of stain and differentiate in distilled water for from 15 to 30 minutes; constantly keep the water in motion.

6. Blot off the excess of water and dehydrate with methyl alcohol, then clear with anilin oil, first blotting.

7. Clear in xylol and mount in balsam.

Bacteria take a deep blue-black stain. The perfect staining and differentiation of the various tissue elements render the method most useful in the demonstration of protozoa and protozoan-like bodies in the cells and intercellular spaces.

PATHOGENIC COCCI.

Differentiation of Streptococci. Buerger[1] finds that streptococci from various sources vary greatly in their ability to

(1) Jour. Exp. Med., ix, p. 428.

produce fermentation of various carbohydrates. His results give six groups, when tested on dextrose, levulose, galactose, maltose, saccharose, lactose, inulin, dextrin and mannite, viz. Those fermenting: 1, All; 2, all but mannite; 3, all but inulin; 4, all but inulin and mannite; 5, all but inulin and lactose; 6, all but inulin, mannite and saccharose.

He cautions that chemical tests of this kind should be made only in the media which are most favorable for the growth of the organisms.

Micrococcic Transformation. The transformation of saprophytic streptococci into pathogenic puerperal cocci was demonstrated by the extensive researches reported by Zangemeister and Meissl[1]. They found that all facultative anaerobic forms belong to a single species. Two important consequences follow such an assumption, viz.: The possibility of streptococci which have hitherto led a saprophytic existence to become pathogenic and the possibility of successful immunization against all strains of streptococci.

With two polyvalent antistreptococcus sera they were able to protect milk against a large number of extraneous strains.

Streptococci in Milk. The relative importance of streptococci in milk depends on the differentiation of pathogenic saprophytic forms. Harris[2] concludes that this is practically impossible by the present methods. He believes that the significance of pus cells in this connection has been overestimated, and calls attention to the phenomenon of lactic leucocytosis.

Heinemann[3] examined five strains of *Streptococcus lacticus* obtained from different samples of milk, and found they became very virulent after prolonged habitation in the body of the rabbit, and ultimately approximated the virulence of the typical *Streptococcus pyogenes.*

Bergey,[4] from investigations on the *relation of leucocytes and streptococci in cow's milk,* concludes: 1. That the method of Trommsdorf is the simplest and most reliable for determining the presence of pus. 2. Practically all

(1) Zeitschr. f. Geb. u. Gynakol., lviii, 3.
(2) Jour. Infect. Dis., May, 1907.
(3) Jour. Infect. Dis., January, 1907.
(4) Univ. of Pa. Med. Bull., September, 1907.

milk contains some leucocytes and streptococci. 3. In practically all cases where the number of leucocytes is high, there will also be found a relative increase in the number of streptococci, indicating the presence of mostitis.

Differentiation of Pneumococci and Streptococci To differentiate between pneumococci and streptococci, Levy[1] found tests with sodium taurocholate most reliable. He announces that the variety known as *S. mucosus* is in reality a pneumococcus. Berry,[2] from the examination of 63 strains of pneumococci, concludes that while coagulation of inulin is valuable corroborative evidence in favor of pneumococcus, yet no organism can be rejected as a pneumococcus, because of one, or even several, non-coagulating inulin cultures.

Flexner[3] during the 1904-5 epidemic of cerebrospinal meningitis in New York made an exhaustive study of the *Diplococcus intracellularis* and concludes that the brief vitality is the result of enzyme action. Sodium chlorid is distinctly poisonous, and that this action is at least partly offset by other salts. The intracellular enzyme, liberated after the death of the cells, is not specific, and causes disintegration of many other varieties of bacteria. This ferment is autolytic and not proteolytic.

The virulence of the organism varies greatly, and when once lost, cannot be restored by animal passage. The autolysates are also toxic. This toxicity is not reduced at 65° C, and hence the toxic body and the enzyme are indifferent, since the latter is appreciably affected at this temperature.

Flexner produced an acute inflammatory condition of the meninges in lower monkeys and the *Diplococcus intracellularis* from man. Injections of enormous quantities of the diplococcus intravenously, and into other tissues except the meninges, produced practically no symptoms.

Relation of Meningococci to Gonococci. The relation of meningococci to gonococci has been studied by Zupnik[4] and Wollstein[5] since Ruppel's announcement of the production with gonococcus cultures, a serum affording protection

(1) Virchow's Arch., clxxxvii, 2.
(2) Jour. Infect. Dis., January, 1907.
(3) Jour. Exp. Med., March, 1907.
(4) Berlin klin. Woch., xliii, 52.
(5) Jour. Exp. Med., ix, 588.

as effectually against meningococci as against gonococci. Zupnik cultivated from epidemic cerebrospinal meningitis a coccus which seemed identical to the gonococcus, but this organism failed to produce gonorrhea in 5 human beings inoculated. Wollstein found that these organisms differ most markedly in cultural characteristics, but that the agglutinins and other properties developing in the sera of immunized animals are largely common to both organisms. Hence Ruppel's conclusion that the antibodies are specific for the genus.

The Bacteriology of Articular Rheumatism. This subject is reviewed by Conner,[1] who thinks we are justified in believing that acute rheumatism is a specific, infectious disease, and not merely an attenuated pyemia resulting from the common pyogenic organisms. That the bacillus of Achalme has no etiologic relation and while there is considerable evidence in favor of the view that the disease is caused by a specific diplococcus or streptococcus, positive proofs of its causal relation are still lacking.

Beattie[2] is convinced from his experiments that results obtained by the injection of streptococci are different from those obtained by injection of the diplococcus rheumaticus. The organisms are not very numerous in the synovial membrane, and not found in the synovial fluid nor in the blood in the typical uncomplicated arthritis cases.

Bacteriology of the Respiratory Tract. This was studied by Davis[3] with special reference to the influenza bacillus, He found these organisms commonly in the upper respiratory tract in various infectious diseases, and especially in whooping cough. These bacilli are pathogenic for man, but their specificity is doubtful. The *Micrococcus catarrhalis* is also a common inhabitant of the respiratory tract in infectious conditions, and sometimes exists in pure culture. It does not appear to produce specific lesions. Injection of influenza bacilli into animals causes the production of specific agglutinins and probably also an increase of opsonins. Because of the occurrence of spontaneous phagocytosis and agglutination in such sera, the determination

(1) Jour. Am. Med. Assoc., xlvii, 379.
(2) British Med. Jour., Dec. 22, 1906.
(3) Jour. Am. Med. Assoc., xlviii, p. 1563.

of the opsonic index of these bacilli is rendered unreliable.

Wollstein[1] did not find the influenza bacillus in throats of healthy children. When they occurred in the throat the disease which they complicated was apparently influenced by them; this was especially true of tuberculosis. The author found a similarity in the cultural characteristics and agglutination reaction of pseudo and true influenza bacilli and concludes that they are identical.

Diphtheria Bacilli in Normal Throats. These organisms were studied by von Sholly[2] and he found that about one-third of the bacteria isolated from such persons are virulent and their carriers consequently a potential source of danger. Virulent bacilli are found about four times as often in healthy persons exposed as in those apparently not exposed.

Pennington[3] examined the diphtheria organisms in throats of well school children and diphtheria convalescents for virulence. Approximately 10 per cent. of well school children harbor in their throats bacilli which correspond morphologically with the Klebs-Loeffler bacillus. One-half of these were without effect on guinea-pigs, about 30 per cent. behaved like attenuated forms and 14 per cent. killed the animals with a fair degree of promptness. Of 25 strains of diphtheria bacilli obtained during the last days of convalescence 23 were highly virulent and only 2 without virulence.

Solis-Cohen[4] treats at length on latent diphtheria as a public health problem. He reports 27 cases from his practice, which bacteriologically showed the Klebs-Loeffler bacillus and clinically were unassociated with pseudomembrane.

Typhoid Bacilli.

Typhoid Bacilli Carriers. Individuals who in institutions harbored typhoid bacilli were studied by Nieter.[5] The frequency of typhoid bacilli in pure cultures in the bile in cases of cholelithiasis suggests to him a twofold etiologic factor, first in the spread of typhoid and secondly in the

(1) Jour. Exp. Med., viii, p. 681.
(2) Jour. Infect. Dis., June 13, 1907.
(3) Jour. Infect. Dis., January, 1907.
(4) Jour. Am. Med. Assoc., xlivx, p. 31.
(5) Münch. med. Woch., liv, No. 33.

production of gallstones. Thirteen bacilli carriers were discovered in a certain asylum.

Pratt, Peabody and Long[1] examined 206 typhoid stools for bacilli, using v. Drigalski-Conradi method, and recovered the *Bacillus typhosus* in only 21 per cent. of the cases. They conclude that it occurs more frequently in the urine than in the stools, and develops luxuriantly in the bile.

Tubercle Bacilli.

New Differential Stain. A new staining technic for differentiating tubercle bacilli of human and bovine origin has been practiced by C. Spengler[2], who describes three rather complicated methods but asserts that they are successful. He found both human and bovine bacilli in 60 per cent. of his phthisical patients. The cases are more chronic when this symbiosis is observed.

Comparative Study of Tubercle Bacilli. A comparative study of 30 strains of tubercle bacilli was made by Robinovitch[3]—25 from man and 5 from animals. The differentiating points rested in their biologic characteristics, the human type growing much more rapidly and luxuriantly and the bovine type possessing a higher grade of virulence for rabbits. The morphologic differences were not characteristic.

Transmission of Tuberculosis from Cattle. This is recorded by Jensen and Fibiger[4] in two cases of primary intestinal tuberculosis, in children. The development of a tuberculous udder infection corresponded with the date of tuberculous affection in the child. Bacilli from both cases displayed great virulence for calves and rabbits.

Shaw[5] reports a case of tubercular meningitis in a child 14 months old, resulting, apparently, from milk infection, in which the cows were found free from tuberculosis. He quotes statistics relative to the greater frequency of tuberculosis between the second and the sixth year, and its comparative infrequency during the first six months (when the majority of children get only mother's milk).

(1) Jour. Am. Med. Assoc., xlix, p. 846.
(2) Deutsch. med. Woch., xxxiii, No. 9.
(3) Arbeit. a. d. Path. Inst., z. Berlin, 1906, p. 365.
(4) Hospitals Aidende, Copenhagen, xlix, No. 46.
(5) Jour. Am. Med. Assoc., xlix, p. 1276.

Intestinal Infection in Tuberculosis. According to Whipple[1] passage of tubercular infection to the lungs from the intestines is not possible, without leaving some record. He concludes that when the mesentine glands are not involved the intestinal tract may be excluded as a portal of entrance.

Bonome,[2] from 129 autopsies of alimentary tract tuberculosis and experimental studies, concludes that intestinal infection is the primary origin of the disease in a large number of cases. This was the case in 17 per cent. of his autopsies, and is most frequent in children up to 16 years of age, when it reaches the proportion of 23 per cent. of cases. Between 16 and 55 years it constitutes only 16 per cent.

Ravenel,[3] from a very comprehensive review of the literature on infection in tuberculosis through food and contact, concludes that the alimentary tract is a frequent portal of entry, and that the bacillus can pass through the intact mucous membrane here, without producing a lesion at the point of entrance. That this passage takes place most readily during the absorption of fat, and the conveyance is chiefly through the lacteals and into the thoracic duct. He also believes that milk from tuberculous cows is the source of infection in many cases, and that infection through the alimentary tract is especially frequent in children.

Tubercle Bacilli in the Feces. In six cases Solis-Cohen[4] found tubercle bacilli in the feces. Expectoration was absent in several of these cases, and he thinks that in some cases this may mean that the bowel is the portal of entrance, rather than of exit.

Rabinowitsch[5] relates experiences with inoculation of rabbits with scraps of bronchial and mediastinal glands from children and adults clinically free from tuberculous processes. Some of these glands showed evidences of previous inflammation, such as calcification. Microscopic examination was negative, but the inoculations revealed tubercle bacilli still retaining their virulence.

(1) Bull. Johns Hopkins Hosp., September, 1907.
(2) Gaz. d. Ospedal., Milan, xxviii, No. 37-84.
(3) Am. Jour. Med. Sciences, October, 1907.
(4) N. Y. Med. Jour., Aug. 31, 1907.
(5) Berl. klin. Woch., xliv, No. 1.

Syphilis.

Stain for Demonstrating the Pale Spirochete. An improved staining technic for demonstration of the *Spirocheta pallida* is described by Kraus,[1] who precedes the Giemsa technic with fixation by osmic acid fumes and then places it for a half minute in 30 per cent. aqueous solution of tannin. Giemsa[2] has modified his technic so that it is now possible to show up the pale spirochete in less than 3 minutes. Preliminary fixation is not necessary. Fresh Giemsa stain 10 drops and 10 c.c. of distilled water are poured over the slide. It is then held 5 cm. above a flame until it just begins to steam, when it is removed for 15 seconds. The stain is poured off and fresh stain is poured over the moist preparation, which is heated as the first and removed for 15 seconds and the solution poured off. This procedure is repeated 4 times, leaving the stain in contact for a whole minute the last time. It is then rinsed and is ready to examine.

MacNeal[3] gives another modification, which also requires less than 3 minutes, but is more complicated. Leroy[4] gives a method and cautions against the use of mercurial washes for cleansing the sore before making examinations. By his method he finds from 5 to 8 in a field rather constantly in primary syphilis.

Schulze[5] states that the more or less spiral elements found in syphilitic and non-syphilitic organs on application of the silver technic are nothing more than tissue elements, generally terminal fibrils of the nerves.

Cultivation of Treponema Pallidum. Cultivation of this organism from the cerebrospinal fluid of cases of secondary syphilis is reported by Leuriax and Geets.[6] In 42 lumbar punctures they obtained growths three times. One part of neutral bouillon was added to two parts of spinal fluid and incubated at 37° C. for from three to four days. The liquid was then centrifugalized and the sediment smeared over coagulated pork serum. The growth appeared at the end of two to four days as an ivory white, moist film.

(1) Münch. med. Woch., liii, No. 52.
(2) Deutsch. med. Woch., xxxiii, No. 17.
(3) Jour. Am. Med. Assoc., xlviii, p. 609.
(4) Ohio State Med. Jour., Aug. 15, 1907.
(5) Berlin. klin. Woch., xliii, No. 52.
(6) Centbl. f. Bakt. u. Parasit, xli, p. 684.

PHYSIOLOGY.

Causes of Fatigue. Frederick S. Lee[1] discusses the causes of fatigue as follows: These are generally acknowledged to be mainly chemical, and of two kinds—namely, the loss of substance that is essential to activity, probably chiefly carbohydrate; and the accumulation of products of activity which are toxic to the living substance. The relation of these two causes to one another is not yet understood; the present study deals with the latter only. The author believes that, in general fatigue, the muscles play a prominent rôle, even though they may not be the most active part of the organism. Three normal fatigue substances are now generally recognized—namely, paralactic acid, monopotassium phosphate, and carbon dioxid. A muscle when irrigated with any one of these substances in weak solution in physiologic salt solution (the paralactic acid being used either as the free acid or as a neutral salt), and when compared with a companion muscle irrigated with physiologic salt solution alone, is already in some degree fatigued, and on stimulation shows an earlier onset and more pronounced development of each successive stage of fatigue up to complete exhaustion. Fatigue is one of the most common phenomena of disease. Examples of pathologic conditions in which it is frequently present are fevers, diabetes mellitus, anemia, various forms of indigestion, inanition, certain diseases of the liver, arthritis deformans, carcinoma, poisoning by arsenic and phosphorus, and also pregnancy. In all of these cases autointoxicants have been found to be present. The number of fatiguing intoxicants will probably be increased by future research, for both normal and pathologic fatigue. It has been customary to attribute to certain intoxicants extreme patho-

(1) British Med. Jour., Dec. 22, 1906.

logic phenomena. For example, the coma of diabetes and eclampsia of pregnancy are probably due to the toxic action of beta-oxybutyric acid. Long before these extreme effects are manifested, however, the same causes seem to be producing evil, if less obvious, phenomena, namely, those of continued fatigue, and are rendering the cells less capable of their proper functions.

Modern Theories of Digestion. These are summarized by Bradley.[1] Our modern views depart from the older conception in a number of important respects. Cannon has shown that there is far less general movement of the contents of the stomach, after a full meal, than was formerly supposed. Volhard's discovery of a new gastric enzyme, gastric lipase, is another addition to our knowledge. Laquer found this substance active enough to convert a large part of the emulsified fat into fatty acids and glycerin. The discovery of this fat-digesting enzyme is of increased significance in the preparation of food for assimilation. The chief differences between our view of pancreatic digestion and that of a decade ago center around the discovery of enterokinase, by Schepowalnikow, and of secreting by Starling. A minute amount of enterokinase will render active a relatively large amount of trypsinogen, leading to the formation of trypsin, which is absent in pure pancreatic juice fresh from the duct of Wirsung. Secretin, discovered by Bayliss and Starling in the mucosa of the duodenum, seems to have the function of stimulating pancreatic secretion. The discovery of the enzyme eripsen, by Cohnheim, in 1901, has helped to account for some of the anomalies of proteid digestion and absorption. Its combined action with that of trypsin reduces a soluble proteid to its cleavage products in a time more closely resembling the speed of digestion in the body than is possible with trypsin alone. The admission of a breaking down to the fundamental units of structure during the process of digestion makes it apparent how a dog can build up typical dog proteid, a fowl its characteristic tissues, a man, his, from the identical diet. We can understand, too, why dog or human serum remains uniform in composition, no matter what the diet. We have simply to assume the two propositions of complete cleavage and re-synthesis, to put the whole question of

(1) Wisconsin Med. Jour., September, 1907.

proteid absorption on a reasonable basis. The work of Abderhelden and his pupils, from another standpoint, presents absolute evidence of proteid synthesis. Recent work by Kauffmann and by Wilcox and Hopkins bears indirectly on another phase of this same question, viz., that there is much evidence to show that proteids are made in the animal organism from the deep-seated cleavage products of proteid digestion. In conclusion, the author calls attention to the fact that the intestine exercises an excretory function as well as an absorptive one, more particularly in the case of metallic salts.

Proteolytic Activity of Pancreatic Juice. Prof. E. Delezenne[1] has found that pancreatic juice in its inactive form acquires an extremely powerful proteolytic activity when mixed with a suitable quantity of a soluble calcium salt and incubated for several hours. Once acquired the proteolytic power of the juice is not affected by removal of the soluble calcium salts either by process of dialysis or precipitation by oxalate of sodium. Careful study of the conditions under which the pancreatic juice becomes active shows that the amount of lime salts necessary for the transformation is exceedingly small. The action of the salts of lime must be considered a specific one.

Metabolism of Creatin and Creatinin. O'Folin[1] concludes as a result of metabolic feeding experiments that (a) there is no experimental evidence showing that creatin is the immediate precursor of the creatinin appearing in the urine. (b) Biologically there seems to be a fundamental difference between creatin and creatinin. (c) In the author's opinion it is not yet clear whether creatin is a waste product or a food.

Diet and Thyroid Activity. Fordyce[2] carried on a series of experiments on rats, with a view to ascertaining whether or not diet had any effect on thyroid activity. The diet given consisted of: (1) Bread and milk; (2) fresh milk; (3) the same milk pasteurized; (4) the same milk boiled for thirty minutes. In all cases an unlimited supply was given. Fordyce found that the variations in the series of glands examined corresponded with the differences in the

(1) Abst. in British Med. Jour., Dec. 22, 1906.
(2) British Med. Jour., Dec. 22, 1906.
(3) British Med. Jour., March 16, 1907.

diet. In the milk-fed rats the gland vesicles were large and well filled with colloid material. The lining cells were small, with deeply stained nuclei. In the glands of the bread-and-milk-fed rats, the vesicles were very markedly smaller and the amount of colloid present very considerably less. The lining cells were columnar.

Pancreas Function and Diet The influence of the character of the food on the functions of the pancreas were studied by Wohlgemuth[1] on a young man left with a fistula into the pancreas after rupture of the organ in a bicycle accident. Experiments with various kinds of food to determine which kind induced the least secretion of pancreatic juice, and thus had a tendency to promote the healing of the wound, showed that the production of the pancreatic juice could be readily controlled by care in selection of articles of food. Fats and albumin checked the production of the pancreatic juice, while the carbohydrates induced a copious secretion. The secretion could be further reduced in amount by frequent administration of moderate doses of sodium bicarbonate, especially during the meals. It was also found possible to substitute the loss of pancreatic juice through the fistula by administration of a pancreas preparation by the mouth several times a day. When the patient ate fat in the form of cream and milk the pancreatic juice ceased to flow from the fistula. After eating meat, it flowed again a little, but on a carbohydrate diet an actual stream poured out of the fistula.

Blood Transfusion. Technic for direct transfusion of blood is described by Crile[2]. The paper is based on 225 experiments on animals and 32 clinical cases. The method used is transference from the radial artery of the donor to the proximal end of any superficial vein of the recipient's arm. Clotting at the site of anastomosis is eliminated by an ingenious tube, so constructed that intima comes in contact with intima alone, without damage to this structure and without possibility of any foreign body getting into the blood stream. The technic is described. The operation may be done painlessly. The blood lost by the donor is regained in from four to five days. The amount is under the operator's immediate control. The rate of transferring

(1) Berlin. klin. Woch., xliv. No. 1.
(2) Ann. Surg., September, 1907.

must be carefully gauged because of the risk of overcharging the pulmonary circulation.

Sympathetic Nervous System. L. R. Müller[1] discusses the relation of the mind to the bodily functions, giving numerous examples in which psychic influences were effective in producing derangement of the various organs, such as vomiting, diarrhea, increased and deficient urination, jaundice, excessive sweating, vasomotor changes, swelling of the nasal mucous membrane, increased secretion of the salivary glands and vice versa, disturbances of the heart action, erections and so forth. He explains these various results on the supposition that they are produced through the excitation of the sympathetic nervous system and that each part of the organism is, as it were, attuned to various vibrations as in a musical instrument or in the wireless telegraph, and that while the whole sympathetic system is affected by these vibrations arising from various emotions only the particular sensitive parts respond. This unusual sensitiveness may be possessed in different individuals by different organs so that in one case the stomach, in the other the rectum, may be affected by a similar emotion. The close relation established between the mind and the various organs of the body is of great practical importance and the influence of the mind should be taken into consideration in dealing with derangement of any organ, however little direct communication there appears to be between them.

(1) Deutsch. Arch. f. klin. Med., March 15, 1907.

INDEX.

Acne, treatment of, 50
  x-ray in, 67
Age limit, 187
Albuminosuria, 207
Albuminuria, prostatic and seminal, 112.
Alopecia in hereditary lues, 105.
  luetic, 105
Ambulance speed, 159.
Angioneurotic edema, 24.
Argyria, 19.
Articular rheumatism, bacteriology of, 224.
Atoxyl, untoward dermic effect of, 26.
Australian aborigines, marriage laws and customs of, 193.

Barberio's reaction for semen, 209.
Bacterial vaccines in dermatology, 49.
Balneology in joint and late gonorrheal lesions, 73.
Bladder extirpation, 125.
  foreign body mimicing labor, 130.
  rupture, 127.
Blastomycosis in infant, 11.
Blood alkalinity, 206.
  examinations, 205.
  transfusion, 232.
Brown-tail moth dermatitis, 16.

Calculi, cystin, 129.
  scrotal, 128.
  vesical, without symptoms, 127.
Cancer, lingual, syphilis and, 95.
Chancre excision and constitutional lues, 106.
  multiple of penis, 90.
  of lip, 103.
Chancroid, 77.
  treatment of, 78.
Christian science, 174.
Conjuctivitis, gonorrheal, 74.
Creatin and creatinin, metabolism of, 231.
Cutaneous horn, 12.
Cystin calculi, 129.
Cystitis, exfoliative, 126.
Cystotomy, suprapubic, in children, 127.

Darier's disease, 9.
Degeneracy, 133.
Dermatitis, brown-tail moth, 16.
Dermatoses and climate, 41.
  diabetic, treatment of, 55.
Dermic chromatophore and Langerhans cells, 23.
  neuroma, 18.
  tubercular infection, 24.
Diazo reaction in tuberculosis, 209.
Digestion, modern theories of, 230.
Diphtheria bacilli in normal throats, 225.

Eczema, erythematous, treatment of, 54.
  infantile, 10.
  in second year, 10.
  x-ray in treatment of, 62.
  zinc perborate in, 50.
Edema, angioneurotic, 24.
Epididymitis, gonorrheal, 74.
  prevention of, 118.
  treatment of, 118.
Erythema induratum, 17.
  nodosum and arthritis, 43.
  of infant's buttocks, treatment of, 55.
Esbach's test of urine complicated by kreatinin, 206.
Euglobin elimination, 207.

Face dermatoses, treatment of, 55.
Fatigue, causes of, 229.
First aid, the physician in, 160.
Furuncles, abortion of, 50.

Gastric disorder and angioneurotic edema, 26.
Gleet, 79.
Glycosuria, experimental, 208.
Gonorrhea, effects of maternal on offspring, 73.
in women, 72.
puerperal, 69.
silver iodid in, 75.
Gonorrheal cell morphology, 79.
conjunctivitis, 74.
peritonitis in men, 78.
pyelitis, 78.
Gumma mimicry by spirochete, 85.

Heliotherapy in psoriasis, 64.
in vitiligo, 64.
Hemocytometer fluid, 206.
Herpes simplex and herpes zoster, 27.
zoster, pectoralis, treatment of, 44.
Hippocratic methods, 168.
Homeopathic and regular physicians, agreement of, 157.
Horn, cutaneous, 12.
Hypospadia, 120.

Ichthyosis, treatment of, 52.
Identification, means of, 158.
Illustrations, medical, 166.
Impetigo, hydrogen peroxid in, 50.
Inefficiency in medical practice, some causes of, 150.
Intestinal obstruction from persistent urachus, 119.
Intra-muscular injections of insoluble mercurials in syphilis, 100.
Iron, deleterious effects of, 199.
Isoagglutination and opsonic determination, 216.
Ivy poisoning, treatment of, 60.

Joint disease, gonorrheal, 72.

Larynx urticaria, 17.
Leprosy, intestinal origin of, 22.
iodoform oil in, 52.
diffusion of, 20.
nastin in, 51.
x-ray in, 68.
Levulosuria, alimentary, 208.
Lichen planus, oral, leukoplakia and lues, 12.
Life, origin of, 164.
Luetic febrile visceral disorders, 86.
Lupus erythematosus, treatment of, 53.

Maoris, medical practice among, 188.
Malpractice suits, 186.
Marriage laws and customs of the Australian aborigines, 193.
physical and evolutionary basis of, 141.
Masturbation in girls, 130.
Medical college hospital, 153.
education, aims and requirements of, 155.
Medicines, patent and proprietary, 143.
Meningococci and gonococci, relation of, 223.
Micrococcic transformation, 222.
Multiple dermoneurotic gangrene, 43.

Negro racial dermatosic aspects, 42.
Neuroma, dermic, 18.

Opsonic index, 214.
Opsonins, combining properties of, 211.
in infancy, 213.
in milk, 213.
in scarlet fever, 212.
pneumococcal, 212.
specificity of, 213.
their existence and relations, 209.
their nature, 210.
Orchitis after mumps, 121.
in typhoid, 121.

Palmitin in mercury injections, 90.
Pancreas function and diet, 232.
Pancreatic juice, proteolytic activity of, 231.
Patient and physician, relation of, 182.
Peliosis rheumatica, 33.
Pemphigus of mucous membrane, 13.
Penis, avulsion of, 122.
Peritonitis, gonorrheal, in men, 78.
Pilocarpin in syphilis, 107.
Phagocytosis in relation to opsonic index, 215.
Pharmacist and physician, relation of, 179.
Phimosis, 122.
Pneumococci and streptococci, differentiation of, 223.
Priapism, persistent, 120.
Prognosis, 161.
Professional confidences, 147.
Prostate cirrhosis, 113.
enlargement, gonorrhea and, 71.
hypertrophy, permanent drainage in, 117.
massage of, 109.
primary sarcoma of, 114.
Prostatectomy, 114.
and malignancy, 117.
in diabetics, 108.
Prostatic and seminal albuminuria, 112.
disease, drainage in, 117.
Prostatitis, 116.
and prostate enlargement, 112.
Pruritis, 28.
pilocarpin in, 60.
treatment of, 56.
Psoriasis, heliotherapy in, 64.
treatment of, 44.
Pyelitis, gonorrheal, 78.

Radiotherapy, toxic effects of, 65.
Respiratory tract, bacteriology of, 224.
Rheumatism, gonorrheal vertebral, 72.
Rhinoscleroma, x-ray in, 66.
Roentgen ray. See x-ray.

Sacral pigment spots in infants, 39.
Salt-free diet in ascites, historic, 167.
Scabies, treatment of, 51.
Scrotal calculi, 128.
Seborrhea, 33.
Secretions, internal, of testicles and ovaries, 119.
Semen, Barberio's reaction for, 209.
Seminal pus tube, 128.
Ship surgeon, 173.
Silver iodid in gonorrhea, 75.
Snobbery in flat owners, 185.
Special dermatoses, 9.
Specialism, 149.
"Spider's lick," 17.
Spirocheta pallida, 83.
cultivation of, 228.
Spirochete motility, 84.
stain for demonstrating, 228.
Sputum spreads, 205.
Staining methods in bacteriology, 220.
Stomatitis, gonorrheal ulceromembranous, 70.
Streptococci, differentiation of, 221.
in milk, 222.
Sugar test, new, 207.
Suprapubic cystotomy in children, 127.
Sympathetic nervous system, 233.
Syphilis, 83.
and lingual cancer, 95.
congenital, 87.
diagnosis by serum reaction, 92.
early treatment of, 83.
extra-genital, 106.
hereditary, in school children, 86.
in dogs, 102.
infection from eye to eye, 95.
inherited, in second generation, 100.

insontium, 86.
in the army, 85.
malignant, 91.
nasal primary, 92.
pilocarpin in, 107.
primary, of larynx, 87.
prophylaxis, 85.
psychoses from secondary, 100.
reinfection, 102.
sulphur waters in, 101.
symptom treatment of congenital, 89.
without secondary results, 97.
Syphilitic alopecia, 105.
eyelid lesions, 95.

Teaching functional pathology, 153.
of medicine in Edinburgh, 151.
Testicle traumatism and industrial insurance, 122.
Testicles, tuberculosis of, 120.
Testicular atrophy, 122.
Test for sugar, a new, 207.
Time of death, 163.
Transmutation of metals, 164.
Tubercle bacilli, comparative study of, 226.
in the feces, 227.
new stain for, 226.
Tuberculide mimicry of other dermatoses, 24.
Tuberculosis, intestinal infection in, 227.
transmission from cattle, 226.
Thyroid activity, diet and, 231.
Typhoid agglutinating test in, 204.
bacilli carriers, 225.
fever, diagnosis of, 203.

Urethral stricture, congenital, 127.
Urethra rupture, 123.
Urine examination, 206.
Urticaria and hypothryoidism, 23.
of larynx, 17.
pigmentosa, x-ray in, 63.

Vaccine therapy, 218.
Varicella dermic histology, 27.
mimicing varioloid, 28.
Vegetable unit description, 162.
Veronal dermatitis, 26.
Vesical calculi without symptoms, 127.
Vesiculotomy, seminal, 129.
Vitiligo, heliotherapy in, 64.

Weather and psoriasis, 42.

Xeroderma pigmentosum, 13.
X-ray dermatitis, carcinoma following, 66.
in cutaneous epithelioma, 61.
in eczema, 62.
in leprosy, 68.
in prostate enlargement, 61.
in rhinoscleroma, 66.
action of, on genitals, 62.
sterility from, 62.
treatment of ringworm, measles, during, 66.

INDEX OF AUTHORS.

Abt, I. A., 89.
Achard, 122.
Adler, 206.
Allen, R. A., 19.
Amberg, S., 213.
Amende, C. G., 60.
Ancel, P., 62.
Andre, M., 117.
Apsen, 50.
Ashmead, 40.
Ball, J. M., 87.
Ballenger, E. G., 116.
Ballin, M. J., 66.
Balthas, V., 122.
Bang, 208.
Banks, 212.
Barendt, F. H., 28.
Barthelmy, 95.
Bates, Daisy N., 193.
Belfield, W. T., 118, 128.

Berda, C., 85
Bergey, 222.
Berry, 223.
Biondi, 122.
Bizzozero, E., 23.
Blaine, J. M., 41.
Blaschko, A., 84.
Blum, 203.
Boggs, R. H., 62, 67.
Broome, 227.
Bouchard, 71.
Bowen, P., 62.
Bradley, 210, 230.
Brew, J., 103.
Brinckerhoff, W. R., 21.
Brödel, Max, 166.
Bruck, 93.
Bruning, W., 102.
Buerger, 221.
Bulkley, L. D., 49, 56.

Cabot, R. C., 157, 174.
Caccini, Attilio, 25.
Calvert, 206.
Campana, L., 20, 53.
Cappucio, D., 100.
Carpenter, Lily F., 64.
Carriere, 50.
Chiadini, 208.
Christian, 208.
Cleft, D., 22.
Cocks, E. M., 13.
Conner, 224.
Conradi, 203.
Cooper, C. E., 17.
Crile, 217, 232.
Crocker, 45.
Cutler, C. W., 70.

Dardel, E., 101.
Dernall, W. E., 18.
Davis, 224.
Delezenne, E., 231.
Delorme, E., 85.
Demanche, 122.
Deycke, 51.
Diday, 106.
Diesing, 52.
Ditman, 210.
Dujarier, C., 120.
Duval, 220.
Dyer, Isadore, 21, 43.

Edington, 206.
Edsall, 65.
Emerson, H., 153.
Epstein, 40, 203.

Fanoni, A., 92, 119.
Fenton, 207.
Ferrand, M., 95.
Fibiger, 226.
Finklestein, 105.
Flexner, 223.
Floyd, 219.
Foote, C. G., 79.
Fordyce, 231.
Foster, Burnside, 22.
Fournier, H., 95.
Fox, G. H., 45.
Fujisawa, 40.
Fuller, Eugene, 127, 129.

Gaston, 105.
Gaucher, 85.
Geets, 228.
Gibbs, S. E., 130.
Giemsa, 228.
Gilchrist, T. C., 24.
Giovine, 207.
Goldberg, B., 71.
Goodman, 205.
Gottheil, W. S., 15, 100.
Griffith, B. B., 186.
Grunewald, 207.
Guile, M., 64.
Gwyn, N. B., 121.

Haemisch, P., 61.
Harrar, 73.
Harris, 222.
Harrison, Reginald, 123.
Hart, M. E., 74.
Hartzell, M. B., 95.
Heinemann, 222.
Hektoen, Ludvig, 216.
Herheimer, 50.
Herrman, C., 39.
Hochsinger, 87, 106.
Hoffmann, E., 102.
Holmes, Bayard, 141.
House, W., 26.
Hyman, S. M., 70.

Imparati, E., 100.
Ivanry, E., 106.

Jacob, F. H., 63.
Jacquet, L., 55.
Jamieson, W. A., 9, 52.
Jensen, 226.
Johnson, W., 118.

Kellogg, 219.
Kessler, J. B., 11.
Keyes, Jr., E. L., 121.
Kiernan, J. G., 44, 100.
Kinch, C. A., 10.
Kingsburg, J., 103.
Klotz, H. G., 105.
Knorr, 218.
Knowles, F. C., 90.
Kraus, 228.
Kummeld, 114.
Labb, 206.
Labbé, 206.
Labenstine, 73.
LaFetra, 40.
Lambkin, F. J., 90, 91.
Lanza, G., 53.
Laquerriere, A., 62.
LaRoque, G. P., 75.
Lassar, G., 68.
Lawrence, Herman, 54.
Lee, Frederick S., 229.
Leiner, C., 106.
Leuriax, 228.
Levi, Leopold, 23.
Levison, J. B., 209.
Levy, 223.
Lewellyn, F., 119.
Lieberthal, D., 12.
LiVirghi, G., 112.
Loeffler, 220.
Long, 226.
Lorimer, G., 168.
Loring, S., 26.
Lusk, W. C., 117.

Macdonald, Ellice, 69.
Macewen, J. W. C., 12.
MacKee, G. M., 97.
Mackinney, W. M., 74, 78.
Maclaren, R., 182.
MacLeod, J. M. H., 10, 66, 208.
MacNeal, 228.
Macphail, D. H., 17.
Maisonneuve, 85.
Marsh, 163.
Martin, W. B. N., 211.
McClintock, R. W., 49.
McCormick, J. N., 179.
McKee, E. S., 147.
Meissl, 222.
Menage, H. E., 21.
Menard, 70.
Mendes, P., 127.
Mitchell, 213.
Montgomery, D. W., 21.
Morgenroth, 221.
Morgenstern, M., 199.
Morris, M., 55.
Morrow, Prince A., 22.
Muir, R., 211.
Müller, L. R., 233.

Nathan, P. W., 72.
Necker, 207.
Neisser, A., 106.
Neuberger, J., 79, 119.
Nieter, 225.
Noguchi, 215.

Oertel, H. B., 128.
O'Folin, 231.
Opie, 213.

Parker, F. J., 95.
Parrot, 105.
Patton, D. Noel, 155.
Peabody, 226.
Pelin, 55.
Pemberton, 65.
Pennington, 225.
Pleig, 61.
Porter, C. A., 66.
Posner, C., 127.
Potter, 210.
Powers, Charles A., 114.
Prager, Paul, 158.
Pratt, 226.
Price, J., 149.
Pye-Smith, 161.

Quick, E., 127.

Rabinowitsch, 227.
Radcliffe-Crocker, H., 22.
Ramsy, William, 165.
Raubitschek, H., 86.
Ravenel, 227.
Rebaudi, 121.

Reekie, John S., 187.
Reid, J. J., 60.
Reschad, 51.
Roberts, John B., 150.
Roberts, Leslie, 33.
Robinovitch, 226.
Robinson, W. J., 107.
Robinson, J. F., 126.
Rolsey, T., 125.
Roosa, St. John, 153.
Rosenow, 212.
Rotch, 219.
Ruggles, E. Wood, 28.
Russell, R. B., 120.
Russell, 213.

Sabouraud, 48, 51.
Saxe, G. DeS., 86.
Schamberg, J. F., 27.
Schivarz, H., 24.
Schottlius, 205.
Schultz, 228, 231.
Sellei, 78.
Shaw, 226.
Sherwell, Samuel, 54.
Shoemaker, J. V., 44, 54.
von Sholly, 225.
Siebelt, J., 73.
Simon, 214.
Simon, C. E., 218.
Smith, P. C., 133.
Snowman, J., 26.
Solis-Cohen, S., 225, 227.
Southam, F. A., 129.
Spengler, C., 226.
Stein, C., 102.
Stelwagon, H. W., 42.
Stertz, 221.
Stober, 204.
Stone, W. S., 72.
Sturgis, F. R., 130.
Symes, J. G., 43.
v. Szollosy, Ludwig, 43.

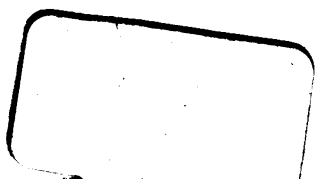
Tausard, 61.
Taylor, R. W., 85.
Terebinski, V. I., 13.
Terrier, F., 120.
Thalmann, 83.
Thomas, 214.
Thompson, J. W., 78.
Thrasher, A. B., 86.
Tomasczewski, E., 95.
Townsend, T. M., 109.
Tunicliff, 212.
Tuttle, J. P., 70.
Tyzzer, E. E., 16, 27.

Uhle, A. A., 74, 77, 78.
Unterberg, 78.

Valentin, F. C., 109.
Vikentiec, 50.

Walker, 215.
Wassermann, 93.
Weiss, L., 17.
Whipple, 227.
White, C. J., 66.
Wiener, J., 108.
Williams, 209.
Williams, C. H., 146.
Williams, C. M., 61.
Williams, W. W., 32.
Witzenhausen, W., 122.
Wohlgemuth, 232.
Wollstein, 223, 225.
Woodhead, Sims, 213.
Wright, 211.

Young, W. G., 112.

Zak, 207.
Zangemeister, 222.
Zupnik, 223.

2 GAL 4344